
SUSPENSION AND AXLE

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TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

SA02L-03

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Symptom	Suspect Area	See page
Wanders/pulls	7. Tire (Worn or improperly inflated) 8. Wheel alignment (Incorrect) 9. Steering linkage (Loosen or worn) 10. Hub bearing (Worn) 11. Steering gear (Out of adjustment or broken) 12. Suspension parts (Worn)	SA-2 SA-4 SA-8 – SA-10 SA-45 SR-31 –
Bottoming	1. Vehicle (Overloaded) 2. Spring (Weak) 3. Shock absorber (Worn)	– SA-25 SA-80 SA-25 SA-80
Sways/pitches	1. Tire (Worn or improperly inflated) 2. Stabilizer bar (Bent or broken) 3. Shock absorber (Worn)	SA-2 SA-39 SA-92 SA-25 SA-80
Front wheel shimmy	1. Tire (Worn or improperly inflated) 2. Wheel (Out of balance) 3. Shock absorber (Worn) 4. Wheel alignment (Incorrect) 5. Ball joint (Worn) 6. Hub bearing (Worn) 7. Steering linkage (Loose or worn) 8. Steering gear (Out of adjustment or broken)	SA-2 SA-2 SA-25 SA-4 SA-35 SA-10 – SR-31
Abnormal tire wear	1. Tire (Worn or improperly inflated) 2. Wheel alignment (Incorrect) 3. Shock absorber (Worn) 4. Suspension parts (Worn)	SA-2 SA-4 SA-8 SA-25 SA-80 –
Oil leak from rear differential	1. Oil level (Too high or wrong grade) 2. Rear differential front oil seal (Worn or damaged) 3. Side gear oil seal (Worn or damaged) 4. Companion flange (Loose or damaged) 5. Side gear shaft (Damaged)	SA-58 SA-58 SA-60 SA-57 SA-60
Oil leak from drive pinion shaft	1. Oil level (Too high or wrong grade) 2. Rear differential front oil seal (Worn or damaged) 3. Companion flange (Loose or damaged)	SA-58 SA-58 SA-57

TIRE AND WHEEL INSPECTION

1. INSPECT TIRE

- (a) Check the tires for wear and proper inflation pressure.

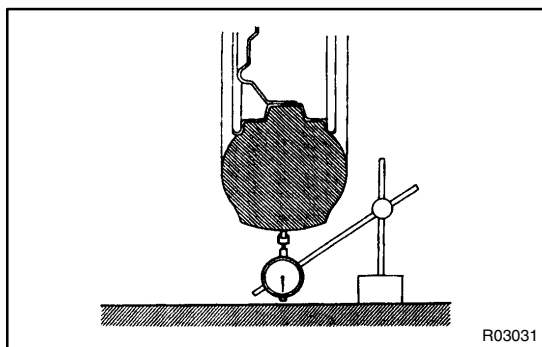
Cold tire inflation pressure

LHD:

Tire size	Front kPa (kgf/cm ² , psi)	Rear kPa (kgf/cm ² , psi)
215/70R16	230 (2.3, 33)	230 (2.3, 33)
225/60R17	210 (2.1, 30)	210 (2.1, 30)

RHD:

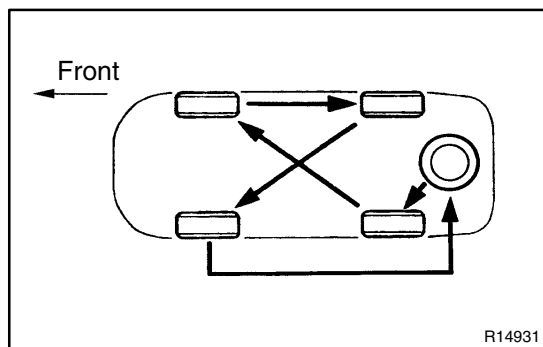
Tire size	Front kPa (kgf/cm ² , psi)	Rear kPa (kgf/cm ² , psi)
215/70R16	230 (2.3, 33)	230 (2.3, 33)



R03031

- (b) Check the tire runout.

Tire runout: 1.4 mm (0.055 in.) or less

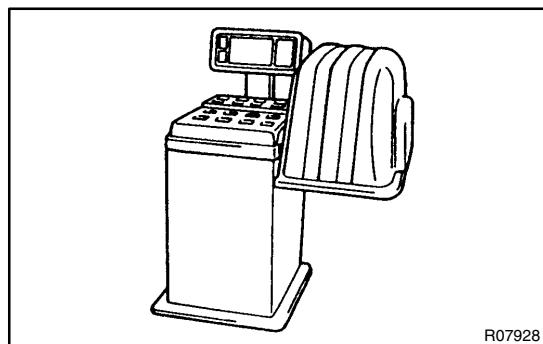


R14931

2. ROTATING TIRES

HINT:

See the illustration for where to rotate each tire when you include the spare tire rotation.

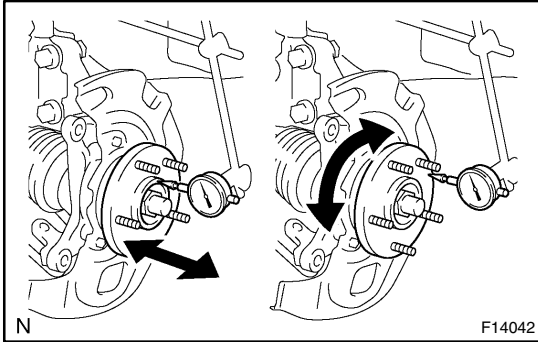


R07928

3. INSPECT WHEEL BALANCE

- (a) Check and adjust the Off-the-car balance.
(b) If necessary, check and adjust the On-the-car balance.

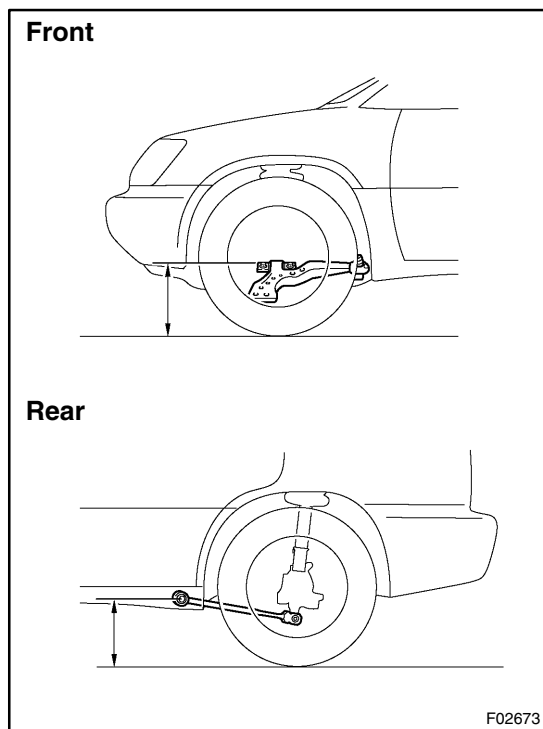
Imbalance after adjustment: 8.0 g (0.018 lb) or less

**4. CHECK WHEEL BEARING LOOSENESS**

- (a) Check the backlash in the bearing shaft direction.
Maximum: 0.05 mm (0.0020 in.)
- (b) Check the axle hub deviation.
Maximum: 0.05 mm (0.0020 in.)

5. CHECK FRONT SUSPENSION FOR LOOSENESS**6. CHECK STEERING LINKAGE FOR LOOSENESS****7. CHECK BALL JOINT FOR LOOSENESS****8. CHECK SHOCK ABSORBER WORKS PROPERLY**

- Check for oil leaks
- Check mounting bushings for wear
- Bounce front and rear of the vehicle



FRONT WHEEL ALIGNMENT INSPECTION

SA107-03

1. MEASURE VEHICLE HEIGHT

Items	Front* ¹	Rear* ²
215/70R16, 225/60R17 (LHD only)	247 mm (9.72 in.)	303 mm (11.93 in.)

*¹: Front measuring point

Measure the distance from the ground to the center of the front side lower suspension arm mounting bolt.

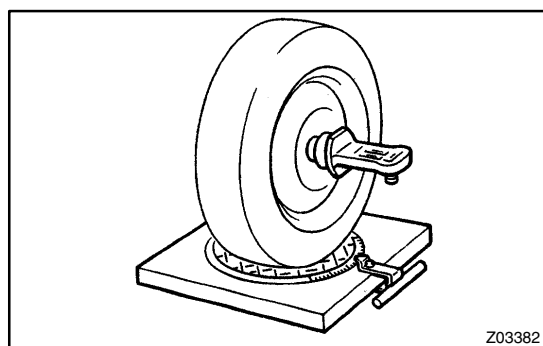
*²: Rear measuring point

Measure the distance from the ground to the center of the front side strut rod mounting bolt.

NOTICE:

Before inspecting the wheel alignment, adjust the vehicle height to the specification.

If the vehicle height is not within the specification, try to adjust it by pushing down on or lifting the body.



2. INSTALL CAMBER-CASTER-KINGPIN GAUGE OR POSITION VEHICLE ON WHEEL ALIGNMENT TESTER

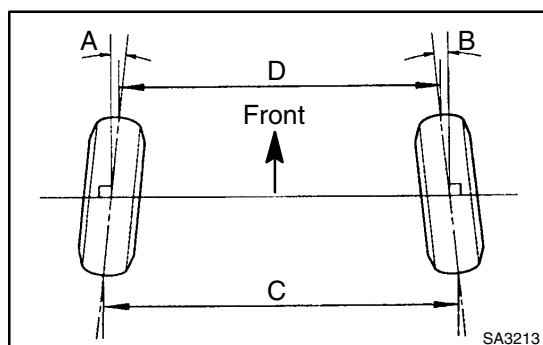
Follow the specific instructions of the equipment manufacturer.

3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

Camber	Left-right error	$-0^{\circ}24' \pm 45'$ ($-0.40^{\circ} \pm 0.75^{\circ}$) 45' (0.75°) or less
Caster	Left-right error	$2^{\circ}09' \pm 45'$ ($2.15^{\circ} \pm 0.75^{\circ}$) 45' (0.75°) or less
Steering axis inclination	Left-right error	$12^{\circ}16' \pm 45'$ ($12.27^{\circ} \pm 0.75^{\circ}$) 45' (0.75°) or less

HINT:

If the caster and steering axis inclination are not within the specification, after the camber has been correctly adjusted, recheck the suspension parts for damaged and/or worn out parts.



4. INSPECT TOE-IN

Toe-in (total)	A + B: $0^{\circ}06' \pm 12'$ ($0.1^{\circ} \pm 0.2^{\circ}$) C - D: 1 ± 2 mm (0.04 ± 0.08 in.)
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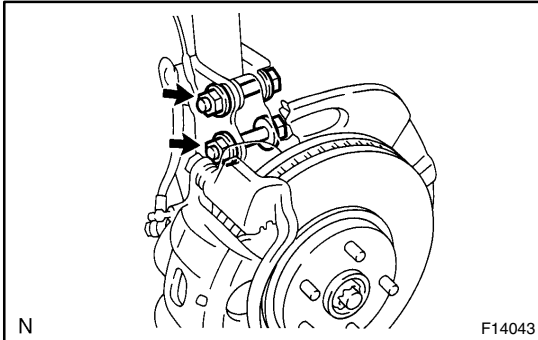
If the toe-in is not within the specification, adjust it at the rack ends.

5. ADJUST CAMBER

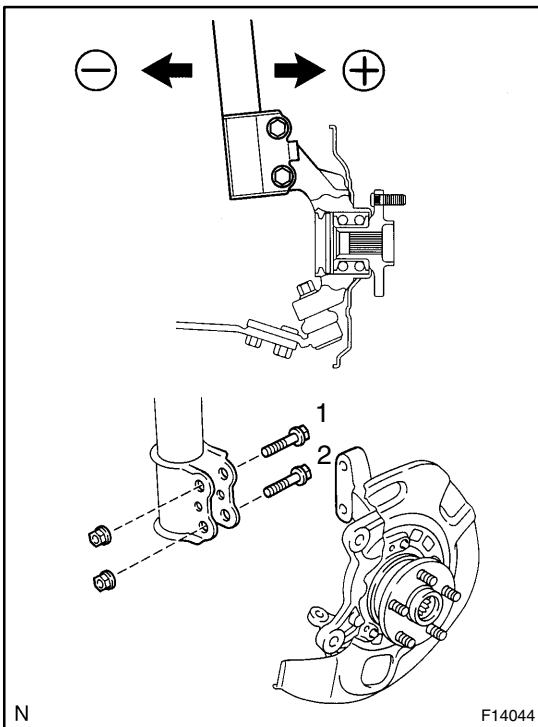
NOTICE:

After the camber has been adjusted, inspect the toe-in.

- (a) Remove the front wheels and ABS speed sensor clamp.



- (b) Remove the 2 nuts on the lower side of the shock absorber.
 (c) Coat the threads of the nuts with engine oil.
 (d) Temporarily install the 2 nuts.



- (e) Adjust the camber by pushing or pulling the lower side of the shock absorber in the direction in which the camber adjustment is required.
 (f) Tighten the nuts.
Torque: 210 N·m (2,150 kgf·cm, 155 ft·lbf)
 (g) Install the front wheels.
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
 (h) Check the camber.

HINT:

- Try to adjust the camber to the center value.
- Adjusting value for the set bolts is 6' – 30' (0.1° – 0.5°).

If the camber is not within the specification, using the following table, estimate for how much additional camber adjustment will be required, and select the camber adjusting bolt.

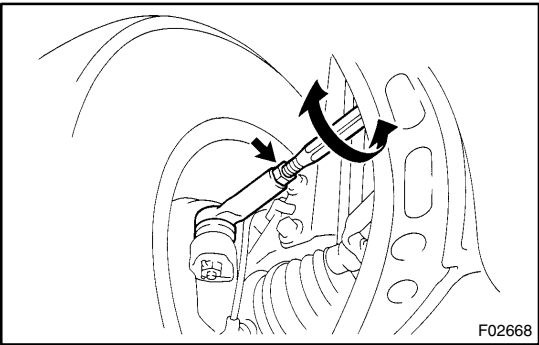
Bolt Adjusting Value	Set Bolt		Adjusting Bolt					
	90105-17001		90105-17003		90105-17004		90105-17005	
			1 Dot 		2 Dots 		3 Dots 	
	1	2	1	2	1	2	1	2
15'	●			●				
30'	●					●		
45'	●							●
1°00'			●					●
1°15'					●			●
1°30'							●	●

F01195

- (i) Follow the steps described above again. Between step (b) and (c), exchange 1 or 2 selected bolts.

HINT:

When exchanging the 2 bolts, exchange 1 bolt for each time.



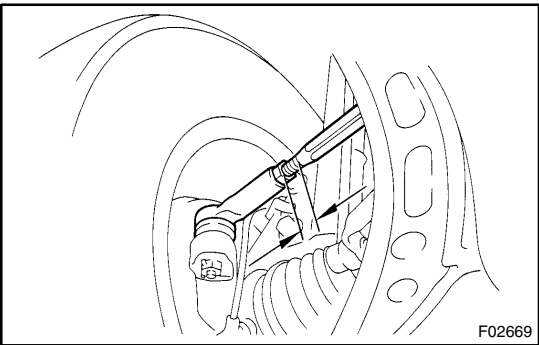
F02668

6. ADJUST TOE-IN

- (a) Remove the boot clamps.
(b) Loosen the tie rod end lock nuts.
(c) Turn the left and right rack ends by an equal amount to adjust the toe-in.

HINT:

Try to adjust the toe-in to the center value.

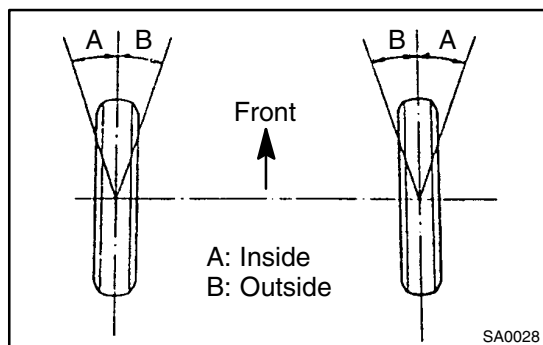


F02669

- (d) Make sure that the lengths of the left and right rack ends are the same.
Rack end length difference: 1.5 mm (0.059 in.) or less
(e) Torque the tie rod end lock nuts.
Torque: 74 N·m (750 kgf·cm, 55 ft·lbf)
(f) Place the boot on the seat and install the clip to it.

HINT:

Make sure that the boots are not twisted.



7. INSPECT WHEEL ANGLE

Turn the steering wheel fully, and measure the turning angle.

LHD models:

Inside wheel	$30^{\circ}53' \pm 1^{\circ}30' (30.88^{\circ} \pm 1.5^{\circ})$
Reference: Outside wheel	$27^{\circ}46' (27.77^{\circ})$

RHD models:

Inside wheel	$34^{\circ}17' \pm 1^{\circ}30' (34.28^{\circ} \pm 1.5^{\circ})$
Reference: Outside wheel	$30^{\circ}11' (30.18^{\circ})$

If the wheel angles differ from the specification, check the lengths of the left and right rack ends.

REAR WHEEL ALIGNMENT INSPECTION

SA16P-02

1. MEASURE VEHICLE HEIGHT (See page SA-4)
2. INSTALL CAMBER-CASTER-KINGPIN GAUGE OR POSITION VEHICLE ON WHEEL ALIGNMENT TESTER

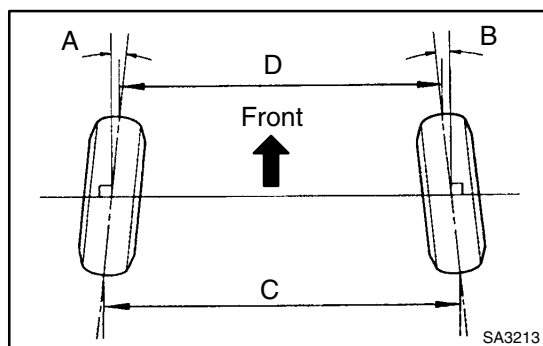
Follow the specific instructions of the equipment manufacturer.

3. INSPECT CAMBER

Camber	$-0^{\circ}42' \pm 45' (-0.70^{\circ} \pm 0.75^{\circ})$
Left-right error	45' (0.75°) or less

HINT:

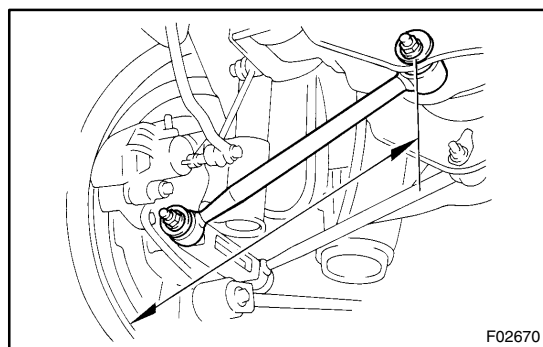
Camber is not adjustable, if the measurement is not within the specification, inspect the suspension parts for damaged and/or worn-out parts and replace them as necessary.



4. INSPECT TOE-IN

Toe-in (total)	A + B: $0^{\circ}18' \pm 12' (0.3^{\circ} \pm 0.2^{\circ})$ C - D: $3 \pm 2 \text{ mm } (0.12 \pm 0.08 \text{ in.})$
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If the toe-in is not within the specification, adjust it at the No. 2 lower suspension arm.



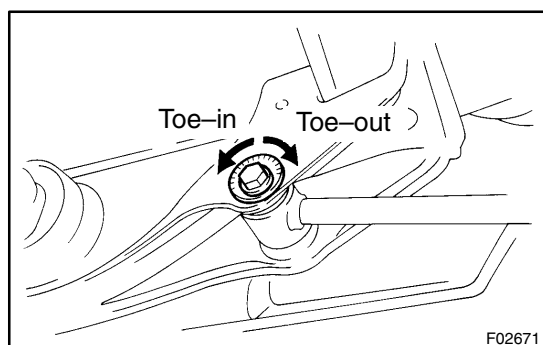
5. ADJUST TOE-IN

- (a) Measure the distance between each wheel disc and corner of the toe-adjusting cam then confirm that left and right distances are the same.

**No. 2 lower suspension arm length difference:
3.0 mm (0.118 in.) or less**

If the left-right difference is larger than 3.0 mm (0.118 in.), adjust it by following the procedures below.

- (b) Loosen the toe-adjusting cam lock bolt.



- (c) Turn the toe-adjusting cam by an equal amount to adjust toe-in.

HINT:

- Try to adjust the toe-in to the center value.
- The toe-in will change by the following specifications corresponding to each graduation of the cam.

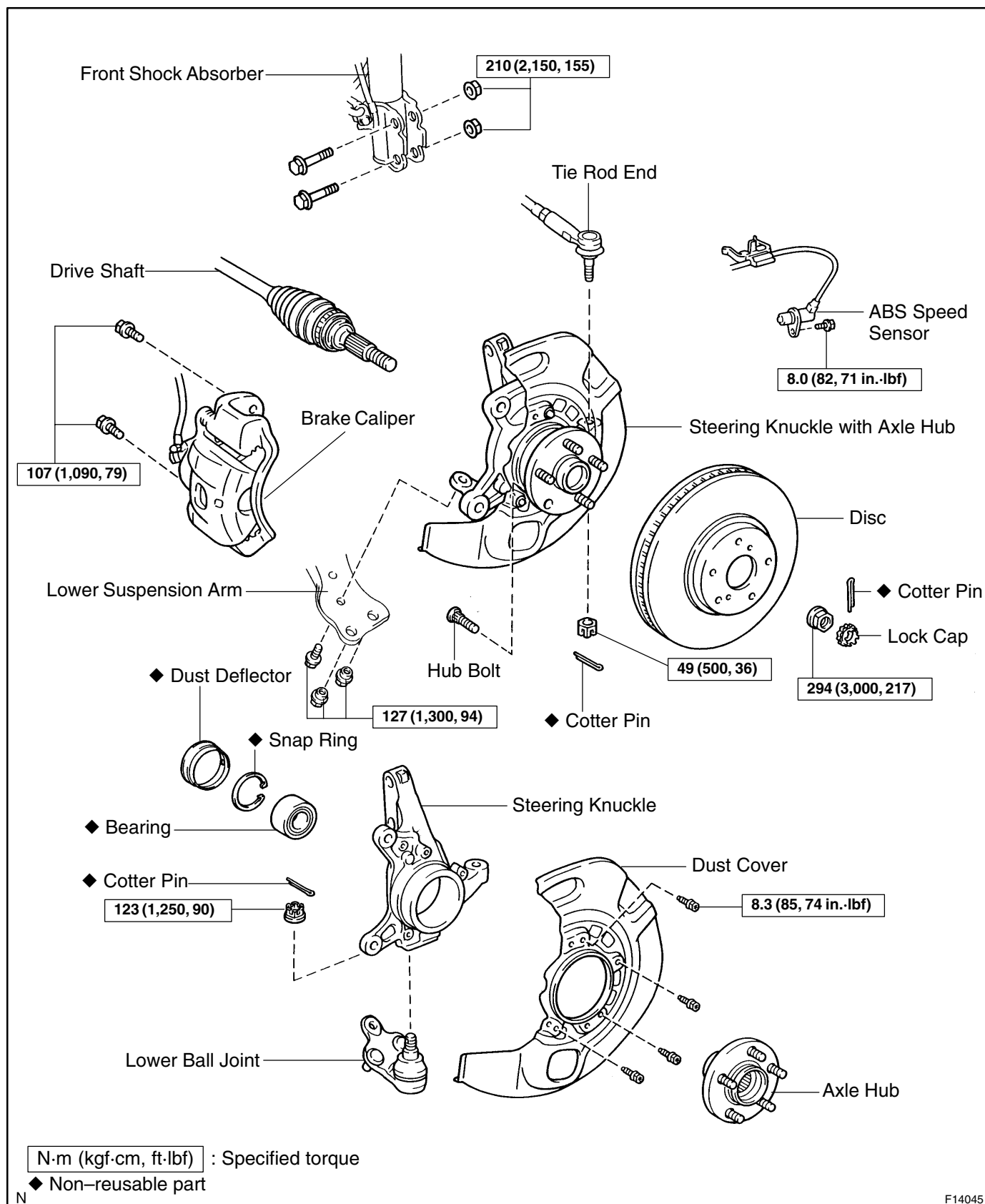
Approx. 3.4 mm (0.134 in.)

- (d) Torque the lock bolt.

Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)

FRONT AXLE HUB COMPONENTS

SA07B-11



N

F14045

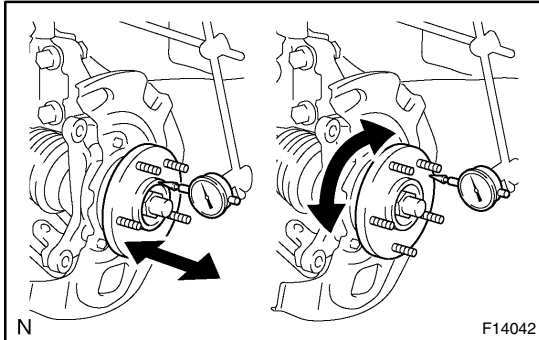
REMOVAL

1. REMOVE FRONT WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

2. CHECK BEARING BACKLASH AND AXLE HUB DEVIATION

- Remove the 2 bolts, brake caliper and disc.
- Support the brake caliper securely.



- Using a dial indicator, check the backlash near the center of the axle hub.

Maximum: 0.05 mm (0.0020 in.)

If the backlash exceeds the maximum, replace the bearing.

- Using a dial indicator, check the deviation at the surface of the axle hub outside the hub bolt.

Maximum: 0.05 mm (0.0020 in.)

If the deviation exceeds the maximum, replace the bearing.

- Install the disc, brake caliper and 2 bolts.

Torque: 107 N·m (1,090 kgf·cm, 79 ft·lbf)

3. REMOVE DRIVE SHAFT LOCK NUT

- Remove the cotter pin and lock cap.
- While applying the brakes, remove the nut.
- Remove the 2 bolts, brake caliper and disc.
- Support the brake caliper securely.

Torque: 107 N·m (1,090 kgf·cm, 79 ft·lbf)

4. REMOVE ABS SPEED SENSOR AND WIRE HARNESS CLAMP

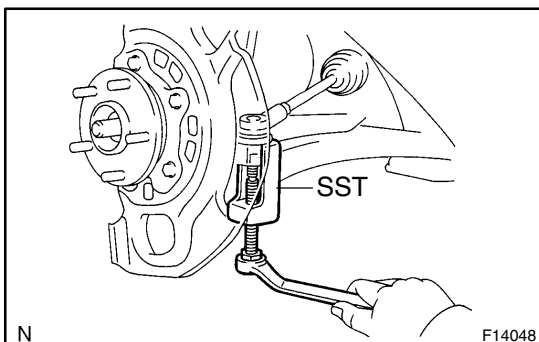
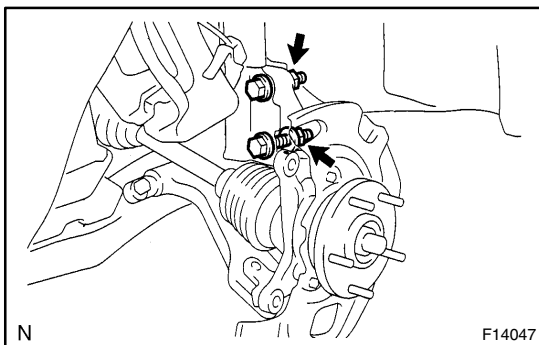
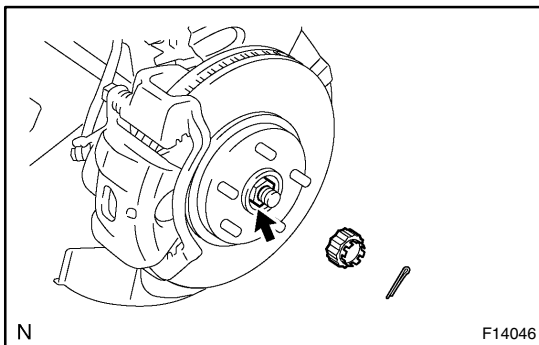
Torque: 8.0 N·m (82 kgf·cm, 71 in.-lbf)

5. LOOSEN 2 NUTS ON LOWER SIDE OF SHOCK ABSORBER

Torque: 210 N·m (2,150 kgf·cm, 155 ft·lbf)

HINT:

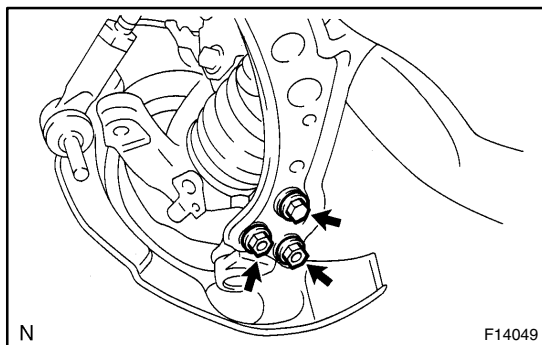
Do not remove the nuts and bolts.



6. DISCONNECT TIE ROD END FROM STEERING KNUCKLE

- Remove the cotter pin and nut.
- Using SST, disconnect the tie rod end from the steering knuckle.

SST 09610-20012



7. DISCONNECT LOWER BALL JOINT FROM LOWER SUSPENSION ARM

Remove the 2 nuts and bolt.

Torque: 127 N·m (1,300 kgf·cm, 94 ft·lbf)

8. REMOVE STEERING KNUCKLE WITH AXLE HUB

- (a) Remove the 2 bolts and nuts on the lower side of the shock absorber.

HINT:

At the time of installation, coat the nut's threads with engine oil.

- (b) Remove the steering knuckle with the axle hub.

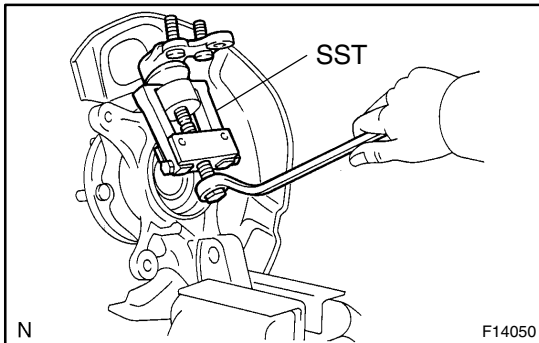
NOTICE:

Be careful not to damage the boot and ABS speed sensor rotor.

DISASSEMBLY

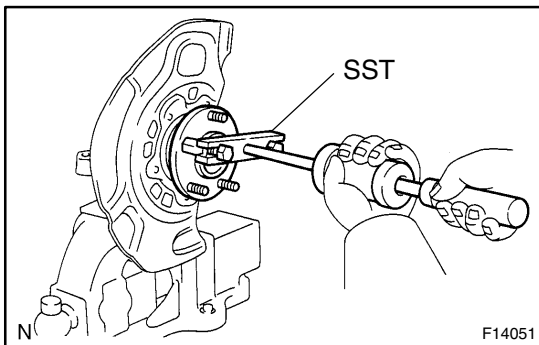
1. REMOVE DUST DEFLECTOR

Using a screwdriver, remove the dust deflector.



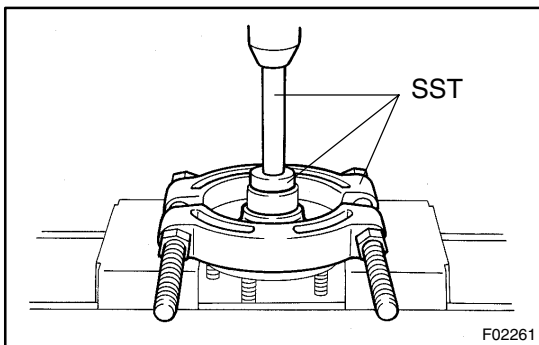
2. REMOVE LOWER BALL JOINT

- (a) Remove the cotter pin and nut.
- (b) Using SST, remove the lower ball joint.
SST 09628-62011



3. REMOVE AXLE HUB

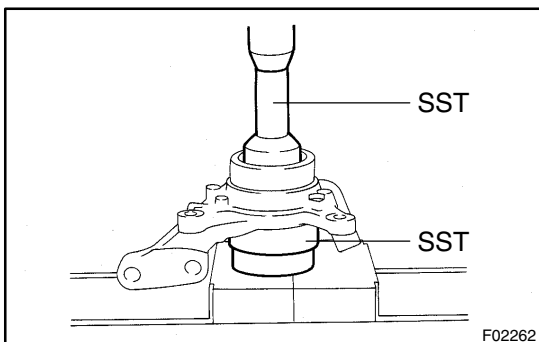
- (a) Using SST, remove the axle hub.
SST 09520-00031



- (b) Using SST and a press, remove the inner race (outside) from the axle hub.
SST 09950-00020, 09950-60010 (09951-00400),
09950-70010 (09951-07100)

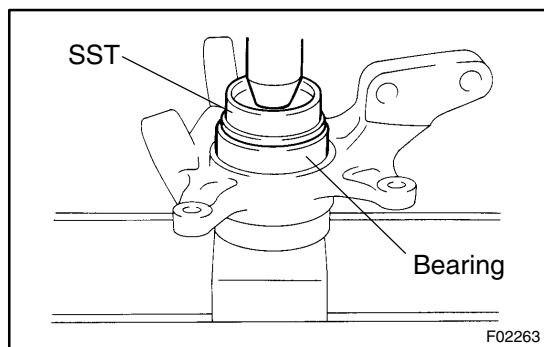
4. REMOVE DUST COVER

Using a torx wrench (T30), remove the 4 bolts and dust cover.



5. REMOVE BEARING FROM STEERING KNUCKLE

- (a) Using snap ring pliers, remove the snap ring.
- (b) Place the inner race on the outside of the bearing.
- (c) Using SST and a press, remove the bearing.
SST 09310-35010, 09527-17011



REASSEMBLY

1. INSTALL BEARING

- (a) Using SST and a press, install a new bearing to the steering knuckle.

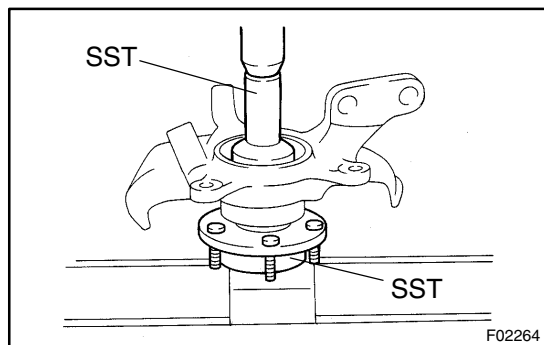
SST 09608-32010

- (b) Using snap ring pliers, install a new snap ring.

2. INSTALL DUST COVER

Using a torx wrench (T30), install the dust cover with 4 bolts.

Torque: 8.3 N·m (85 kgf·cm, 74 in·lbf)



3. INSTALL FRONT AXLE HUB

Using SST and a press, install the axle hub.

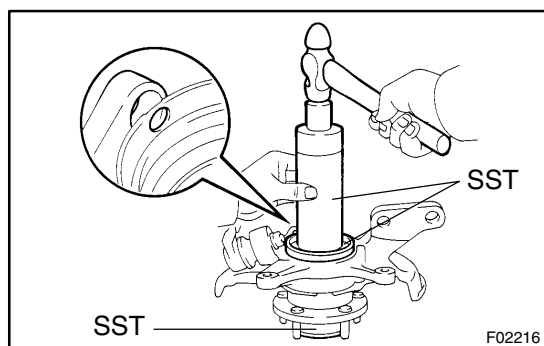
SST 09310-35010, 09608-32010

4. INSTALL LOWER BALL JOINT

- (a) Install the lower ball joint and tighten the nut.

Torque: 123 N·m (1,250 kgf·cm, 90 ft·lbf)

- (b) Install a new cotter pin.



5. INSTALL DUST DEFLECTOR

Using SST and a hammer, install a new dust deflector.

SST 09316-60011 (09316-00011, 09316-00041),
09608-32010

HINT:

Align the hole for the ABS speed sensor in the dust deflector with the hole in steering knuckle.

INSTALLATION

Installation is in the reverse order of removal (See page SA-10).

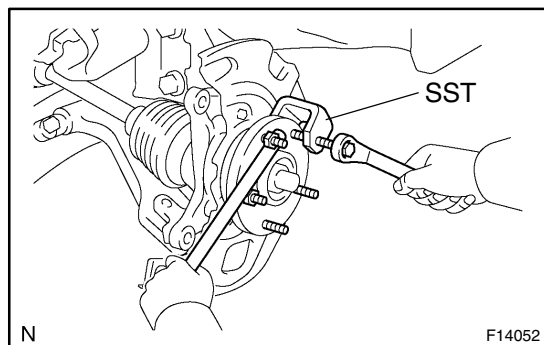
HINT:

After installation, check the ABS speed sensor signal (See page DI-205) and front wheel alignment (See page SA-4).

FRONT WHEEL HUB BOLT REPLACEMENT

SA07G-07

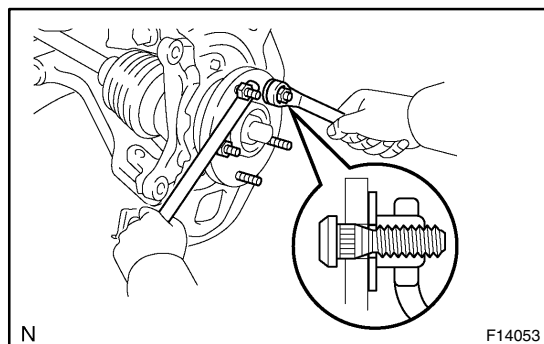
1. **REMOVE FRONT WHEEL**
2. **REMOVE BRAKE CALIPER AND DISC**
 - (a) Remove the 2 bolts, brake caliper and disc.
 - (b) Support the brake caliper securely.



3. REMOVE HUB BOLT

Using SST, remove the hub bolt.

SST 09628-10011



4. INSTALL HUB BOLT

- (a) Install a washer and nut to the hub bolt as shown in the illustration.
- (b) Install the hub bolt by torquing the nut.

5. INSTALL BRAKE DISC AND CALIPER

Install the disc, brake caliper and 2 bolts.

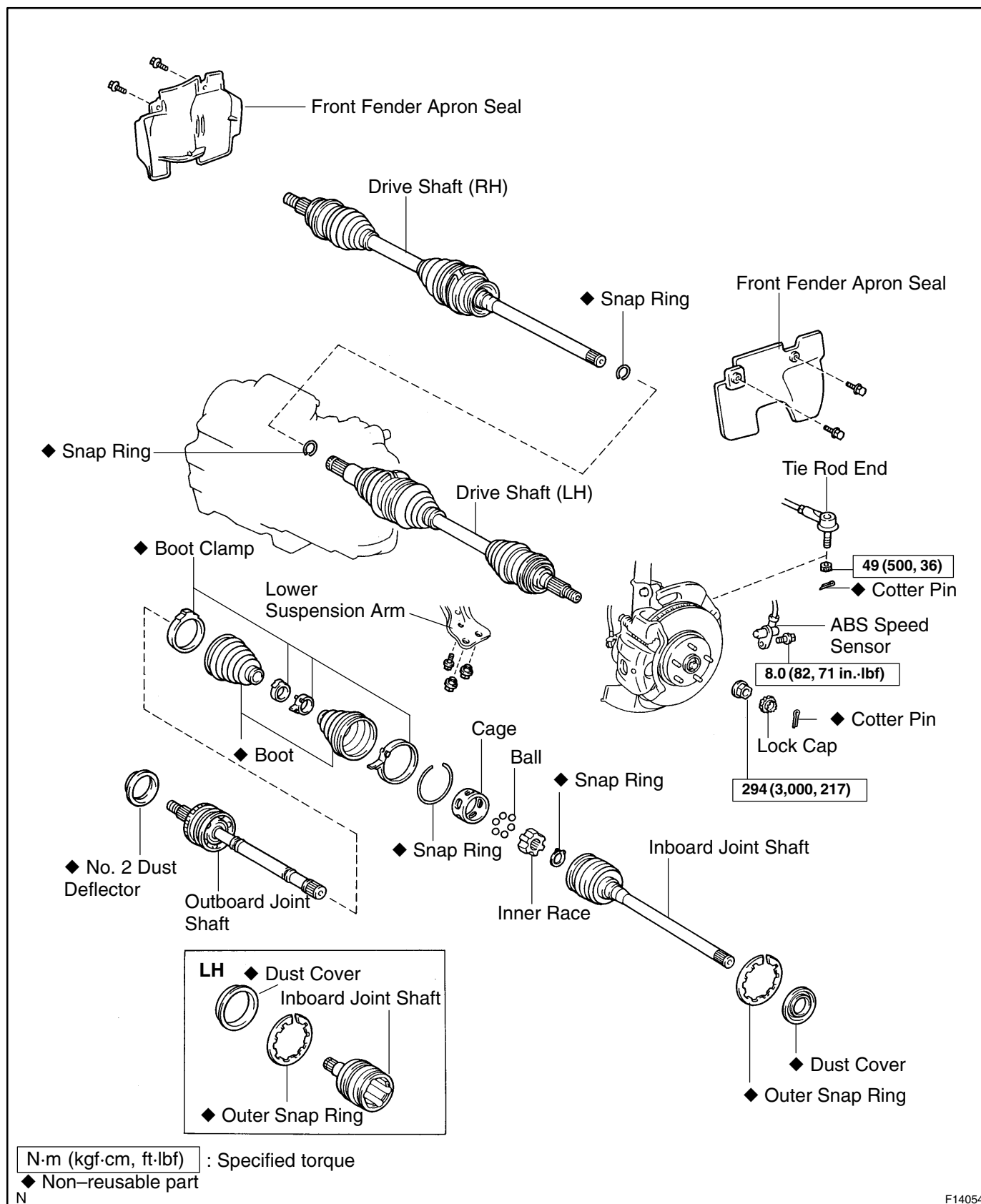
Torque: 107 N·m (1,090 kgf·cm, 79 ft·lbf)

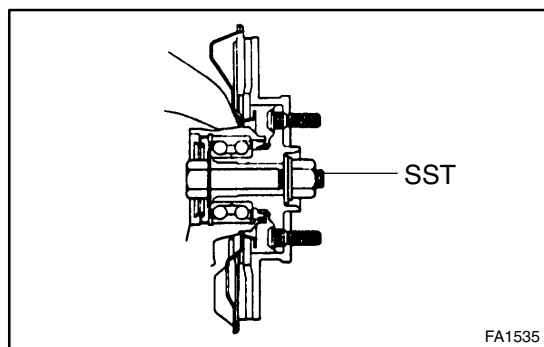
6. INSTALL FRONT WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

FRONT DRIVE SHAFT COMPONENTS

SA16V-02





REMOVAL

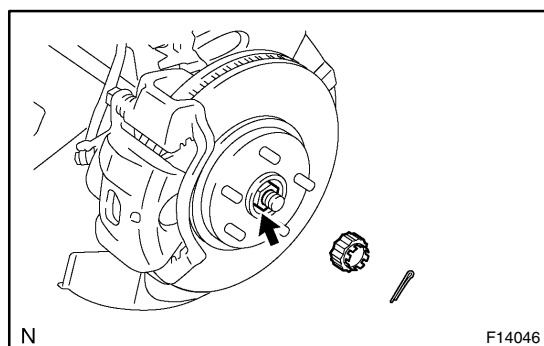
NOTICE:

- The hub bearing could be damaged if it is subjected to the vehicle weight, such as when moving the vehicle with the drive shaft removed.

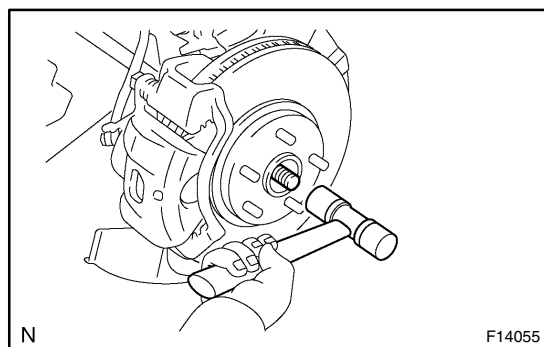
Therefore, if it is absolutely necessary to place the vehicle weight on the hub bearing, first support it with the SST.

SST 09608-16042 (09608-02021, 09608-02041)

- After disconnecting the drive shaft from the axle hub, work carefully so as not to damage the ABS speed sensor rotor serration on the drive shaft.
- REMOVE FRONT WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
 - DRAIN ATF**
 - REMOVE FRONT FENDER APRON SEAL**
 - REMOVE BOLT AND ABS SPEED SENSOR**
Torque: 8.0 N·m (82 kgf·cm, 71 in·lbf)



- REMOVE DRIVE SHAFT LOCK NUT**
 - Remove the cotter pin and lock cap.
 - While applying the brakes, remove the nut.
Torque: 294 N·m (3,000 kgf·cm, 217 ft·lbf)
- DISCONNECT TIE ROD END FROM STEERING KNUCKLE** (See page SA-10)
- DISCONNECT LOWER BALL JOINT FROM LOWER SUSPENSION ARM** (See page SA-10)

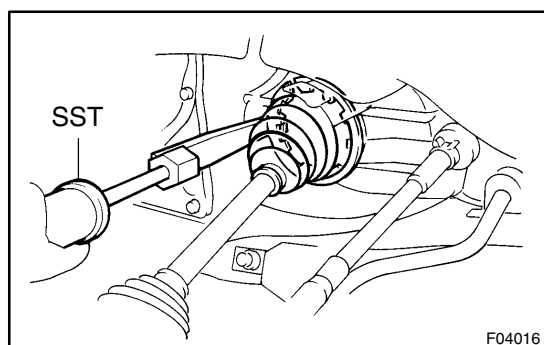


- DISCONNECT DRIVE SHAFT FROM AXLE HUB**
 - Using a plastic hammer, disconnect the drive shaft from the axle hub.

NOTICE:

Be careful not to damage the boot and ABS speed sensor rotor.

- Push the front axle hub toward the outside of the vehicle to separate the drive shaft from the axle hub.



- REMOVE DRIVE SHAFT**
 - Using SST, remove the drive shaft.
SST 09520-01010, 09520-24010 (09520-32040)

NOTICE:

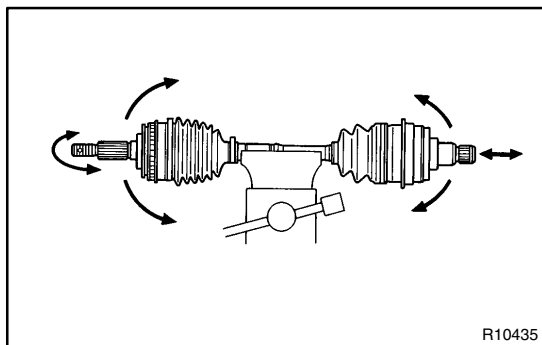
Be careful not to damage the oil seal and dust cover.

HINT:

At the time of installation, please refer to the following items.

- Apply gear oil to the inboard joint shaft and differential case sliding surfaces.

- Before installing the drive shaft, set the snap ring with its opening side facing downward.
 - Whether inboard joint shaft is in contact with pinion shaft or not can be known from the sound or feeling.
 - After installation, check that there is 2 – 3 mm (0.08 – 0.12 in.) of play in the axial direction.
 - After installation, check that the drive shaft cannot be removed by hand.
- (b) Using a screwdriver, remove the snap ring from the inboard joint shaft.



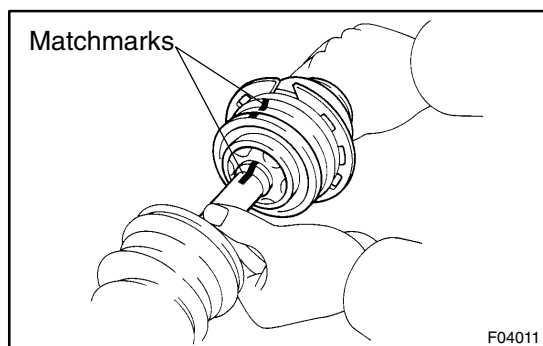
DISASSEMBLY

1. CHECK DRIVE SHAFT

- Check to see that there is no remarkable play in the outboard joint.
- Check to see that the inboard joint slides smoothly in the thrust direction.
- Check to see that there is no remarkable play in the radial direction of the inboard joint.
- Check the boots for damage.

2. REMOVE INBOARD JOINT BOOT CLAMPS

- Using a screwdriver, remove the 2 boot clamps.
- Slide the inboard joint boot toward outboard joint.

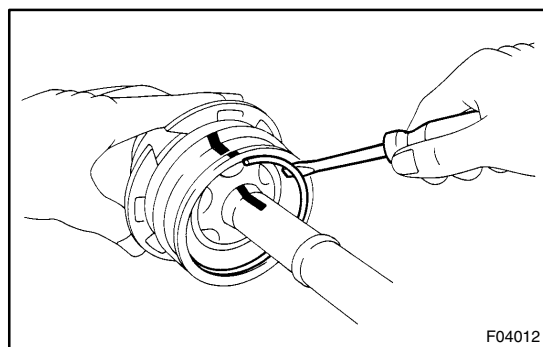


3. REMOVE INBOARD JOINT SHAFT

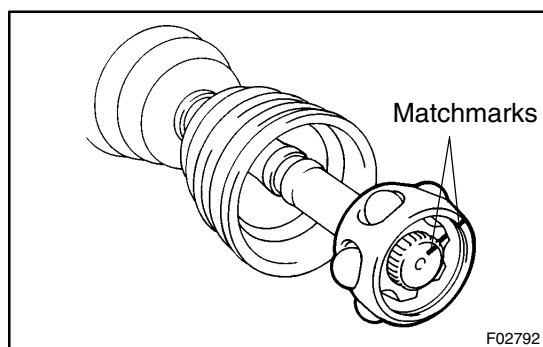
- Place matchmarks on the outboard joint shaft and inboard joint shaft.

NOTICE:

Do not punch the marks.

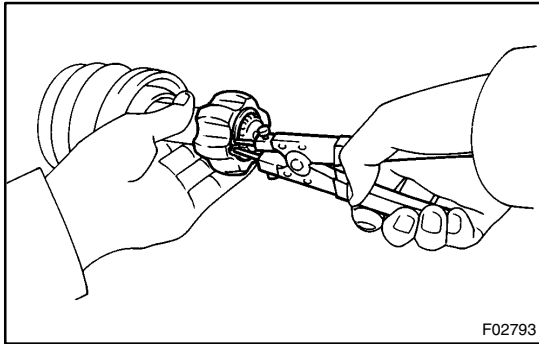


- Using a screwdriver, remove the snap ring.
- Remove the inboard joint shaft from the outboard joint shaft.

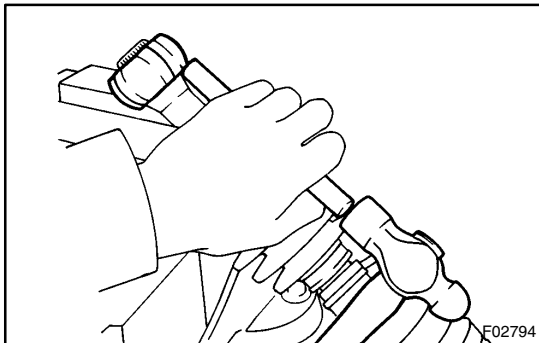


4. DISASSEMBLE OUTBOARD JOINT SHAFT

- Place the matchmarks on the outboard joint shaft, inner race and cage.
- Remove the 6 balls.
- Slide the cage toward outboard joint.



- (d) Using a snap ring expander, remove the snap ring.



- (e) Using a brass bar and hammer, remove the inner race.

NOTICE:

Be careful not to damage the inner race.

- (f) Remove the cage.

5. REMOVE INBOARD JOINT BOOT

6. REMOVE OUTBOARD JOINT BOOT

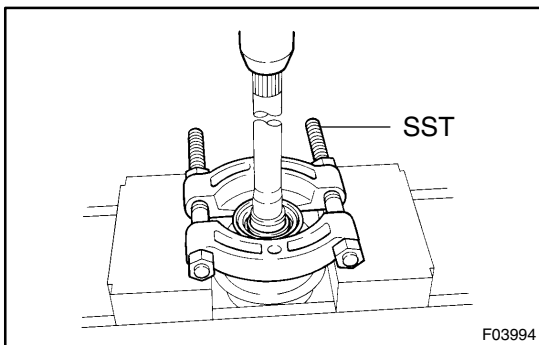
- (a) Using a side cutter or pliers, remove the 2 boot clamps.

- (b) Remove the outboard joint boot.

7. REMOVE DUST COVER FROM INBOARD JOINT SHAFT

- (a) LH drive shaft:

Using a screwdriver and hammer, remove the dust cover.



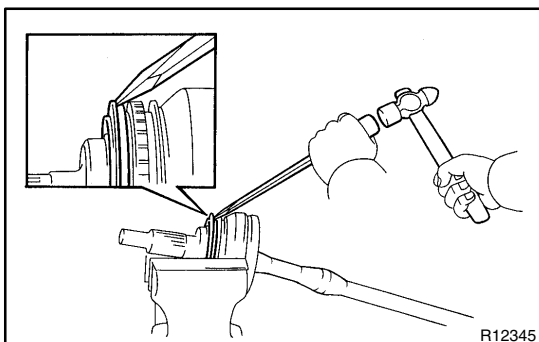
- (b) RH drive shaft:

Using SST and a press, remove the dust cover

SST 09950-00020

8. REMOVE OUTER SNAP RING

Using a snap ring expander, remove the outer snap ring from the inboard joint shaft.



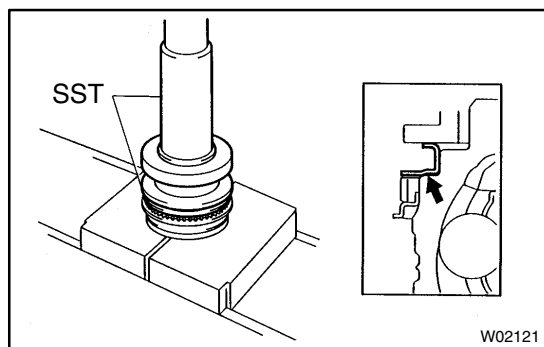
9. REMOVE NO. 2 DUST DEFLECTOR

- (a) Mount outboard joint shaft in a soft jaw vise.

- (b) Using a screwdriver and hammer, remove the No. 2 dust deflector.

NOTICE:

Be careful not to damage the ABS speed sensor rotor.



REASSEMBLY

1. INSTALL NO. 2 DUST DEFLECTOR

Using SST and press, install a new No. 2 dust deflector.

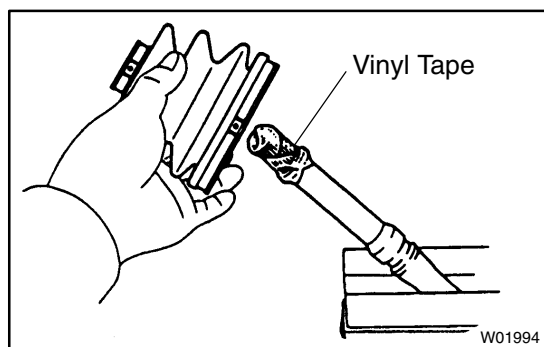
SST 09309-36010, 09316-20011

2. INSTALL OUTER SNAP RING

Using a snap ring expander, install a new outer snap ring on the inboard joint shaft.

3. INSTALL DUST COVER

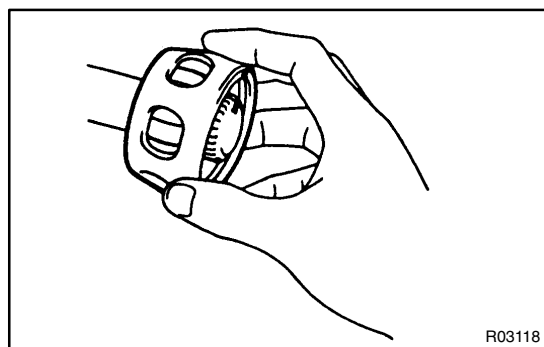
Using a press, install a new dust cover.



4. TEMPORARILY INSTALL NEW OUTBOARD AND INBOARD JOINT BOOTS WITH NEW BOOT CLAMPS

HINT:

- Before installing the boots, wrap the spline of the outboard joint shaft with vinyl tape to prevent them from being damaged.
 - Before installing the boots, place 2 new clamps to outboard joint boot and inboard joint boot.
- (a) Temporarily install a new outboard joint boot with 2 clamps to the outboard joint shaft.
 - (b) Temporarily install a new inboard joint boot with 2 clamps to the outboard joint shaft.



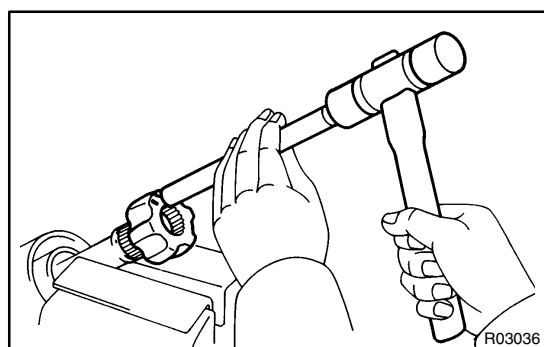
5. ASSEMBLE OUTBOARD JOINT SHAFT

- (a) Install the cage to the outboard joint shaft.

NOTICE:

The side with smaller diameter must face outboard joint.

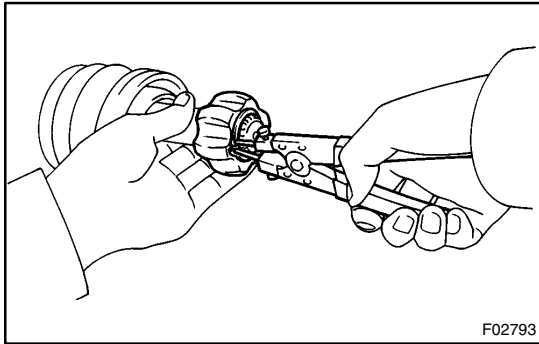
- (b) Align the matchmarks on the inner race and outboard joint shaft.



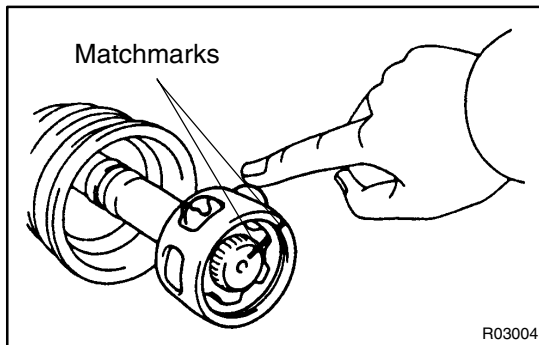
- (c) Using a brass bar and hammer, tap in the inner race to the outboard joint shaft.

NOTICE:

Be careful not to damage the inner race.



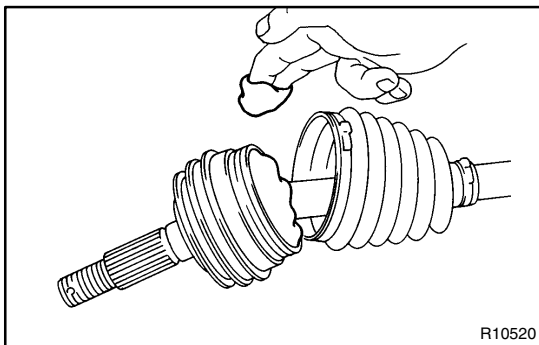
- (d) Using a snap ring expander, install a new snap ring.



- (e) Align the matchmarks on the cage and inner race.
 (f) Install the cage to the inner race.
 (g) Install the 6 balls.

HINT:

Apply grease onto the balls to keep them from falling.



6. INSTALL BOOT TO OUTBOARD JOINT SHAFT

Before assembling the boot, pack the outboard joint and boot with grease in the boot kit.

Grease capacity: (Color = Yellow)

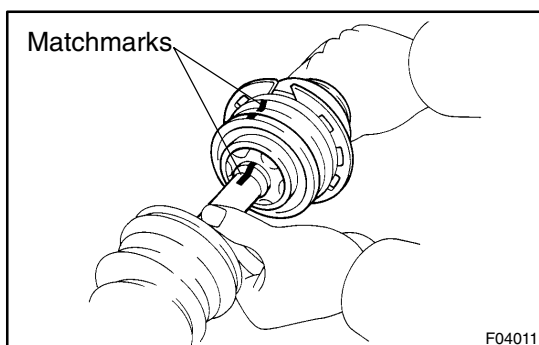
115 – 135 g (4.1 – 4.8 oz.)

7. INSTALL INBOARD JOINT SHAFT TO OUTBOARD JOINT SHAFT

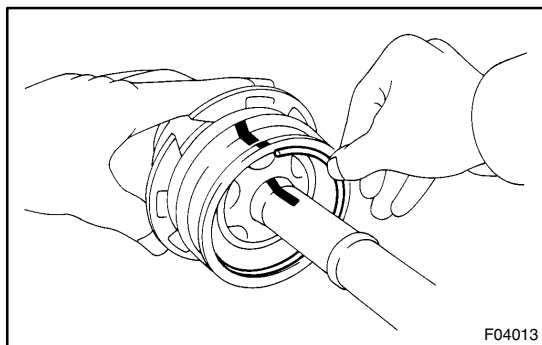
- (a) Before assembling the boot, pack the inboard joint and boot with grease in the boot kit.

Grease capacity: (Color = Gray)

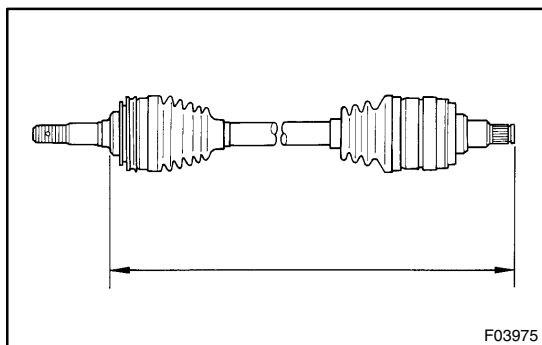
95 – 115 g (3.4 – 4.1 oz.)



- (b) Align the matchmarks on the inboard joint shaft and outboard joint shaft.
 (c) Install the inboard joint shaft to the outboard joint shaft.



- (d) Install a new snap ring.
- (e) Temporarily install the boot to the inboard joint shaft.



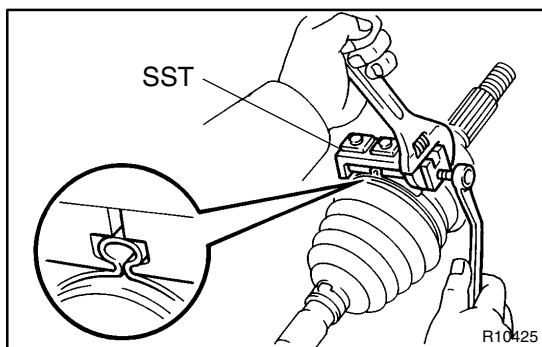
8. ASSEMBLE BOOT CLAMPS TO BOTH BOOTS

- (a) Make sure that the 2 boots are on the shaft grooves.
- (b) Make sure that the 2 boots are not stretched or contracted when the drive shaft is at standard length.

Drive shaft standard length:

LH	563.2 ± 2.0 mm (22.173 $\pm$ 0.079 in.)
RH	914.8 ± 2.0 mm (36.016 $\pm$ 0.079 in.)

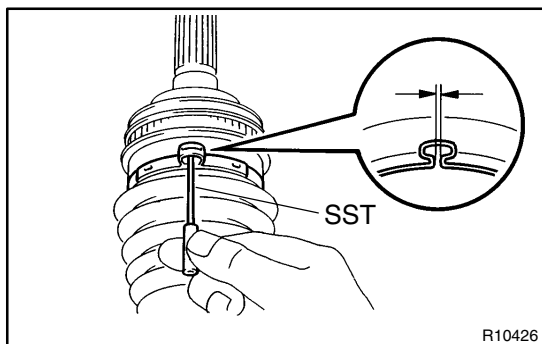
- (c) Place 2 new boot clamps to the inboard joint boot.
- (d) Using a screwdriver, bend the band and lock the inboard joint boot clamps.



- (e) Place 2 new boot clamps to the outboard joint boot.
- (f) Place SST onto the outboard joint boot clamp.
SST 09521-24010
- (g) Tighten SST so that the clamp is pinched.

NOTICE:

Do not overtighten the SST.



- (h) Using SST, adjust the clearance of the clamp.
SST 09240-00020
Clearance: 1.2 – 4.0 mm (0.047 – 0.157 in.)
- ## 9. CHECK DRIVE SHAFT (See page SA-19)

INSTALLATION

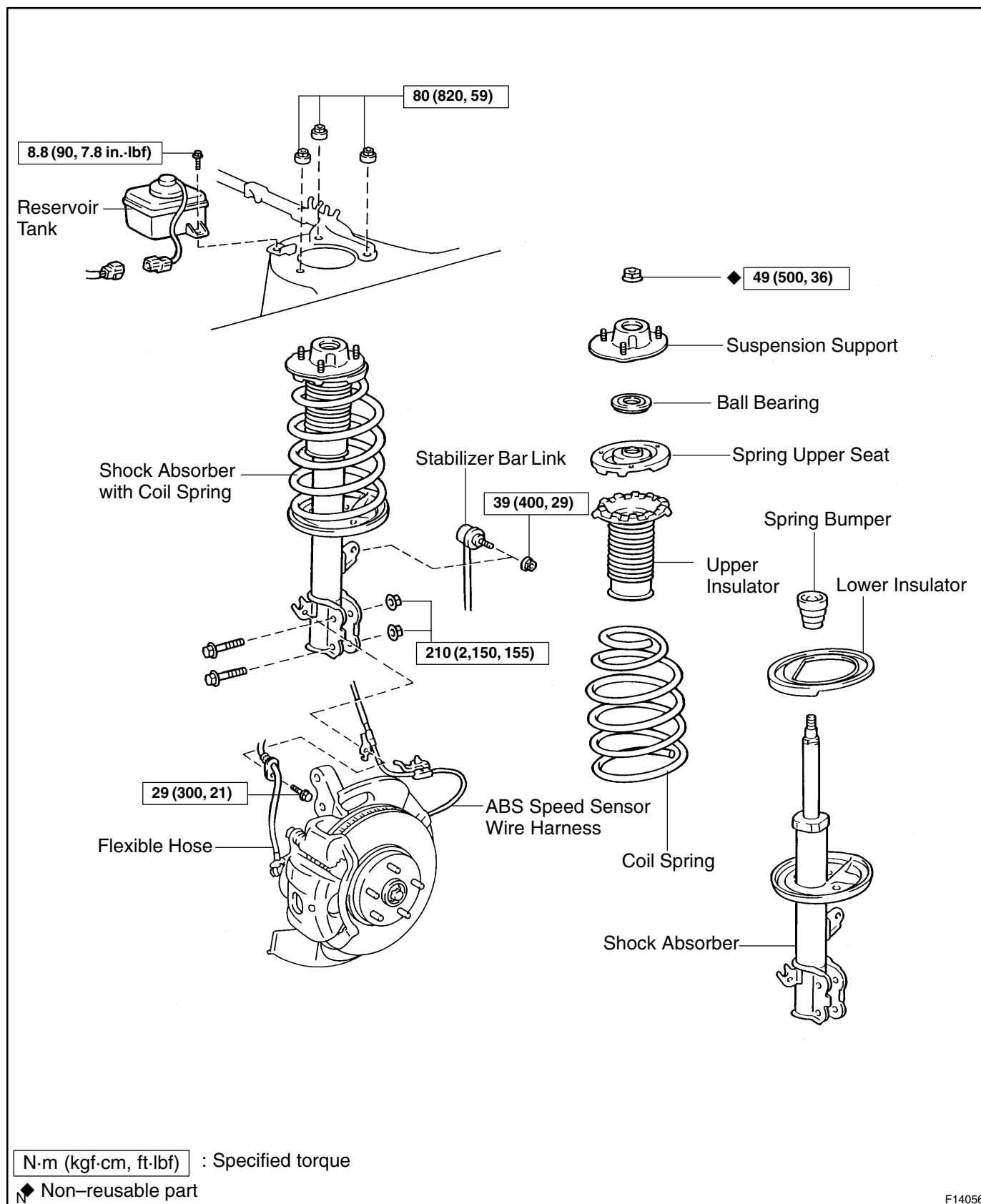
Installation is in the reverse order of removal (See page SA-17).

HINT:

After installation, check the ABS speed sensor signal (See page DI-205) and front wheel alignment (See page SA-4).

FRONT SHOCK ABSORBER COMPONENTS

SA10J-07



F14056

REMOVAL

1. **REMOVE FRONT WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **DISCONNECT FLEXIBLE HOSE AND ABS SPEED SENSOR WIRE HARNESS CLAMPS FROM SHOCK ABSORBER**

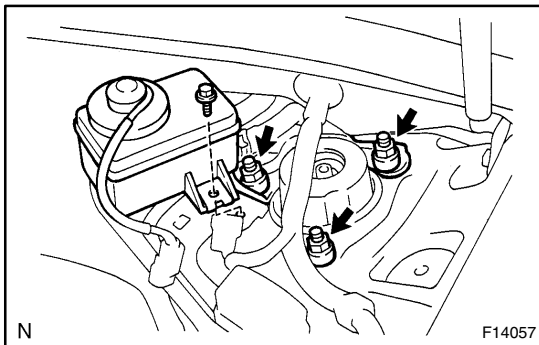
Remove the bolt and disconnect the flexible hose and ABS speed sensor wire harness clamps from shock absorber bracket.

Torque: 29 N·m (300 kgf·cm, 21 ft·lbf)

3. **DISCONNECT STABILIZER BAR LINK FROM SHOCK ABSORBER (See page SA-40)**
4. **REMOVE SHOCK ABSORBER WITH COIL SPRING**
 - (a) Loosen the 2 nuts on the lower side of shock absorber.
Torque: 210 N·m (2,150 kgf·cm, 155 ft·lbf)

HINT:

Do not remove the 2 bolts.

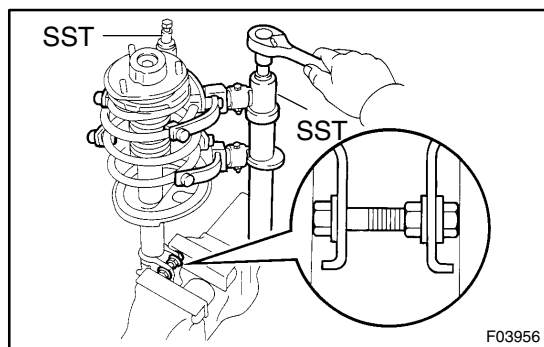


- (b) LH side (LHD only):
Remove the reservoir tank set bolt and disconnect the connector.
Torque: 8.8 N·m (90 kgf·cm, 7.8 in·lbf)
- (c) Remove the 3 nuts on the upper side of the shock absorber.
Torque: 80 N·m (820 kgf·cm, 59 ft·lbf)
- (d) Remove the 2 nuts and bolts on the lower side of shock absorber.

HINT:

At the time of installation, coat the nut's thread with engine oil.

- (e) Remove the shock absorber with coil spring.



DISASSEMBLY

REMOVE COIL SPRING

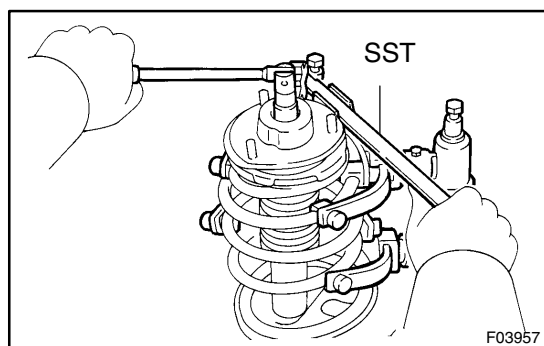
- (a) Install 2 nuts and a bolt to the bracket at the lower side of the shock absorber and secure it in a vise.
- (b) Using SST, compress the coil spring.
SST 09727-30021

NOTICE:

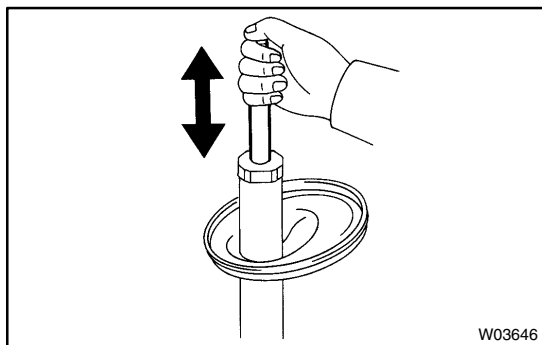
Do not use an impact wrench. It will damage the SST.

HINT:

Use 2 of the same type of SST.



- (c) Using SST to hold the spring upper seat, remove the nut.
SST 09729-22031
- (d) Remove the suspension support, ball bearing, spring upper seat and upper insulator.
- (e) Remove the coil spring, spring bumper and lower insulator.



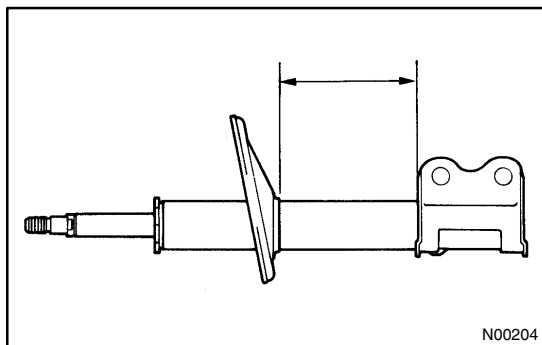
INSPECTION

INSPECT SHOCK ABSORBER

Compress and extend the shock absorber rod and check that there is no abnormal resistance or unusual operation sound. If there is any abnormality, replace the shock absorber with a new one.

NOTICE:

When disposing of the shock absorber, see DISPOSAL on page SA-29.



DISPOSAL

1. **FULLY EXTEND SHOCK ABSORBER ROD**
2. **DRILL HOLE TO DISCHARGE GAS FROM CYLINDER**

Using a drill, make a hole in the cylinder, as shown in the illustration to discharge the gas inside.

CAUTION:

The discharging gas is harmless, but be careful of chips which may fly up when drilling.

REASSEMBLY

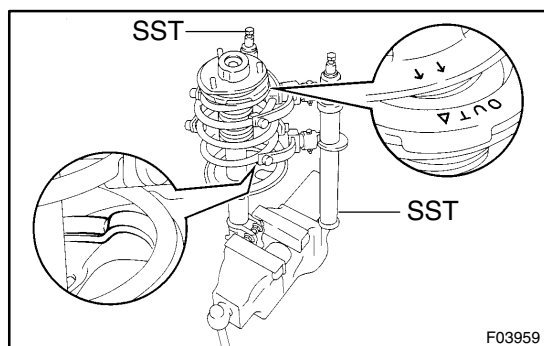
1. **INSTALL LOWER INSULATOR ONTO SHOCK ABSORBER**
2. **INSTALL SPRING BUMPER TO PISTON ROD**
3. **INSTALL COIL SPRING**
 - (a) Using SST, compress the coil spring.
SST 09727-30021

NOTICE:

Do not use an impact wrench. It will damage the SST.

HINT:

Use 2 of the same type of SST.

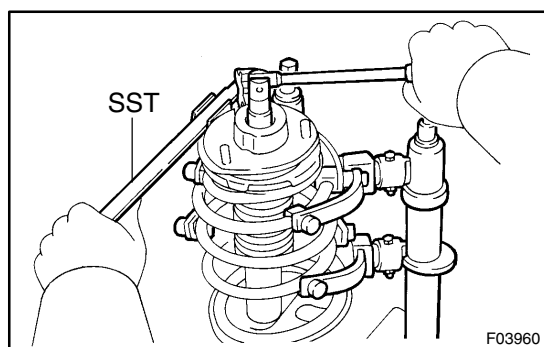


- (b) Install the coil spring to the shock absorber.

HINT:

Fit the lower end of the coil spring into the gap of the spring lower seat.

4. **INSTALL UPPER INSULATOR, SPRING UPPER SEAT, BEARING AND SUSPENSION SUPPORT**
 - (a) Install the upper insulator.
 - (b) Install the spring upper seat to the shock absorber with the mark facing to the outside of the vehicle.
 - (c) Install the ball bearing.
 - (d) Install the suspension support with the mark facing to the outside of the vehicle.



- (e) Using SST to hold the spring upper seat, install a new nut.
SST 09729-22031
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)
- (f) Remove the SST from the coil spring.
SST 09727-30021

INSTALLATION

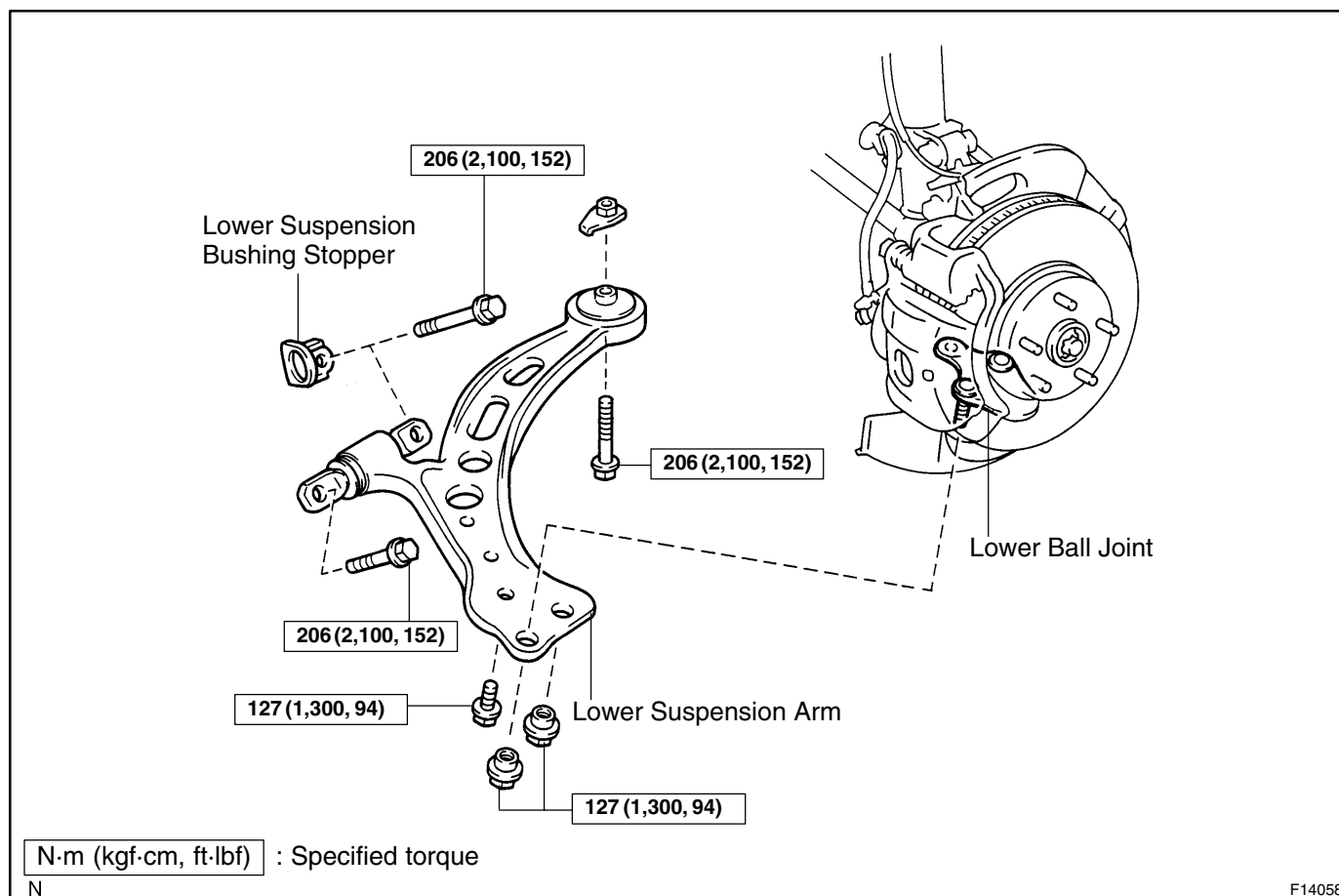
Installation is in the reverse order of removal (See page SA-26).

HINT:

After installation, check the front wheel alignment (See page SA-4).

FRONT LOWER SUSPENSION ARM COMPONENTS

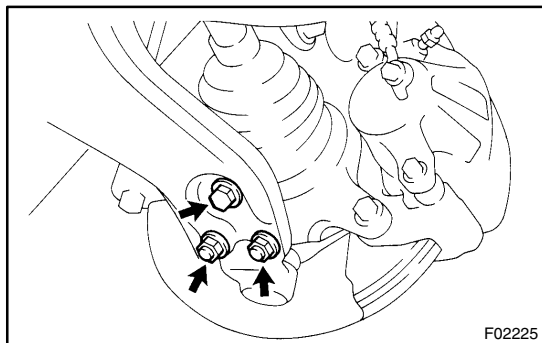
SA07T-07



REMOVAL

1. REMOVE FRONT WHEEL

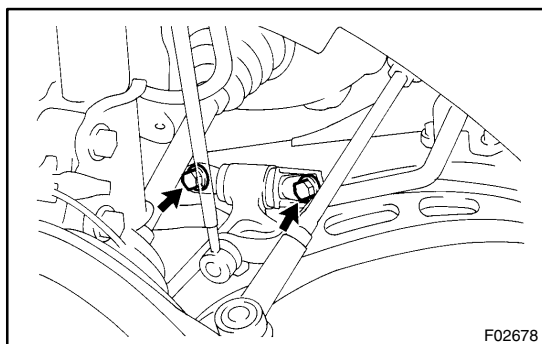
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



2. DISCONNECT LOWER SUSPENSION ARM FROM LOWER BALL JOINT

Remove the 2 nuts and bolt.

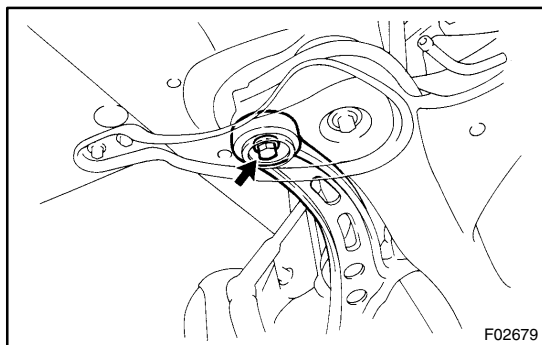
Torque: 127 N·m (1,300 kgf·cm, 94 ft·lbf)



3. REMOVE LOWER SUSPENSION ARM

(a) Remove the 2 bolts on the front side of the lower suspension arm.

Torque: 206 N·m (2,100 kgf·cm, 152 ft·lbf)



(b) Remove the bolt and nut on the rear side of the lower suspension arm.

Torque: 206 N·m (2,100 kgf·cm, 152 ft·lbf)

(c) Remove the lower suspension arm.

(d) Remove the lower suspension arm bushing stopper from the lower suspension arm.

INSTALLATION

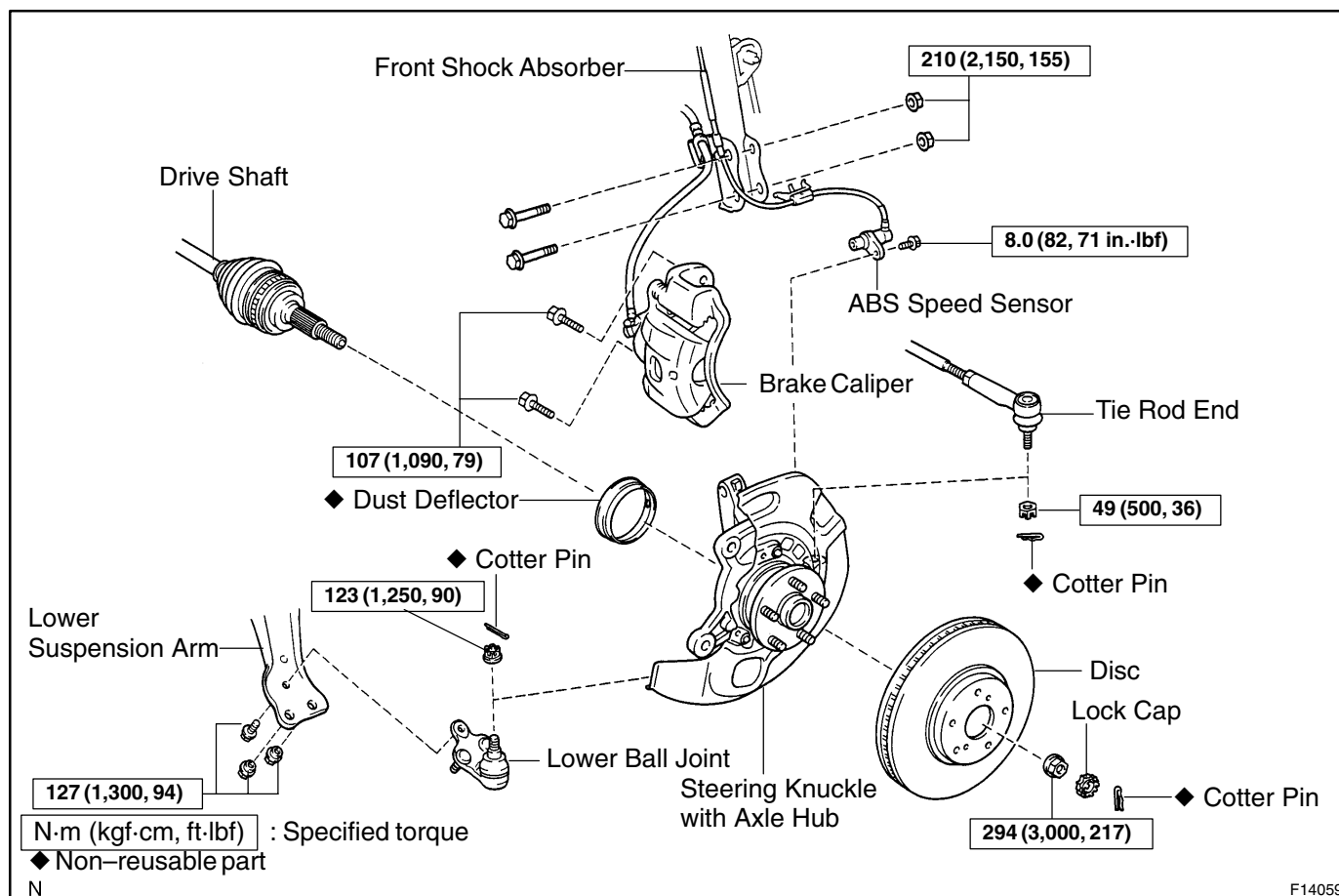
Installation is in the reverse order of removal (See page SA-33).

HINT:

After installation, check the front wheel alignment (See page SA-4).

FRONT LOWER BALL JOINT COMPONENTS

SA07X-10

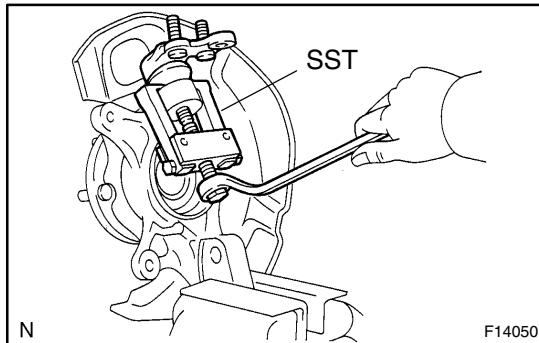


REMOVAL

1. **REMOVE STEERING KNUCKLE WITH AXLE HUB**
(See page SA-10)

2. **REMOVE DUST DEFLECTOR**

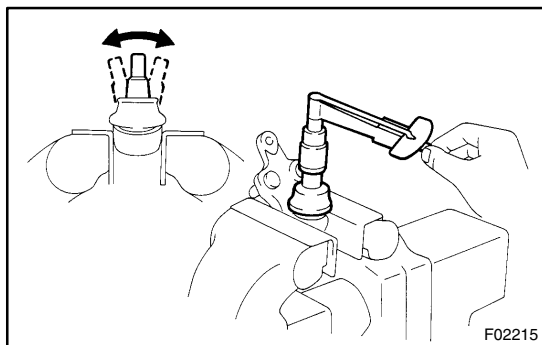
Using a screwdriver, remove the dust deflector.



3. **REMOVE LOWER BALL JOINT**

- (a) Remove the cotter pin and nut.
- (b) Using SST, remove the lower ball joint.

SST 09628-62011



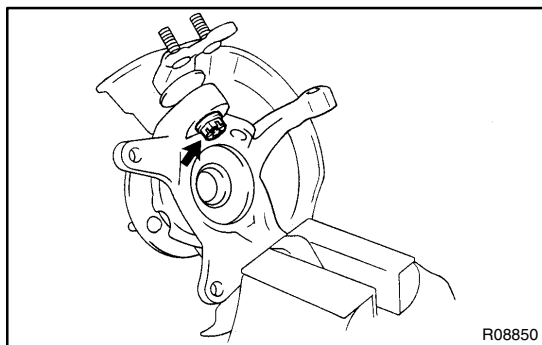
INSPECTION

INSPECT LOWER BALL JOINT FOR ROTATION CONDITION

- (a) As shown in the illustration, flip the ball joint stud back and forth 5 times, before installing the nut.
- (b) Using a torque wrench, turn the nut continuously 1 turn per 2 – 4 seconds and take the torque reading on the 5th turn.

Turning torque:

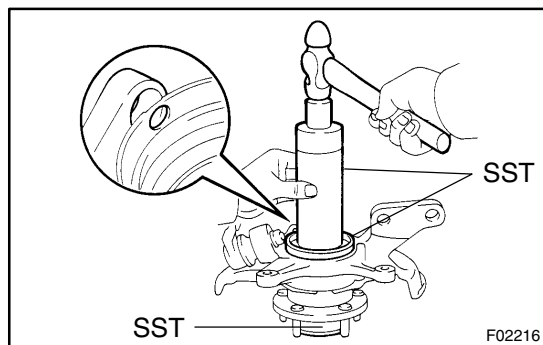
1.0 – 3.4 N·m (10 – 35 kgf·cm, 8.7 – 30 in.-lbf)



INSTALLATION

1. INSTALL LOWER BALL JOINT

- (a) Install the lower ball joint and tighten the nut.
Torque: 123 N·m (1,250 kgf·cm, 90 ft·lbf)
- (b) Install a new cotter pin.



2. INSTALL NEW DUST DEFLECTOR

Using SST and a hammer, install a new dust deflector.

SST 09316-60011 (09316-00011, 09316-00041),
09608-32010

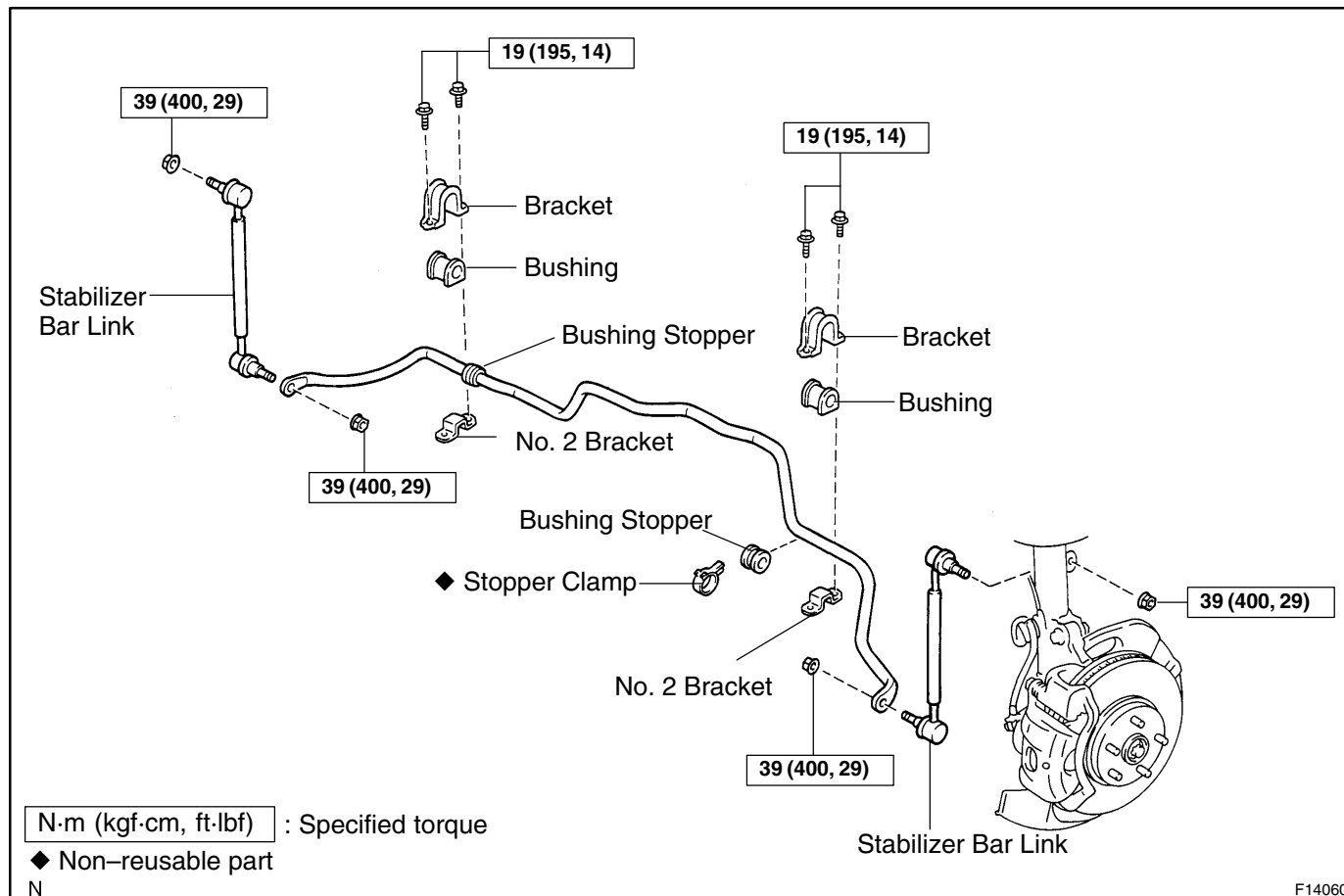
HINT:

Align the hole for the ABS speed sensor in the dust deflector with the hole in steering knuckle.

3. **INSTALL STEERING KNUCKLE WITH AXLE HUB**
(See page SA-14)
4. **CHECK ABS SPEED SENSOR SIGNAL**
(See page DI-205)
5. **CHECK FRONT WHEEL ALIGNMENT**
(See page SA-4)

FRONT STABILIZER BAR COMPONENTS

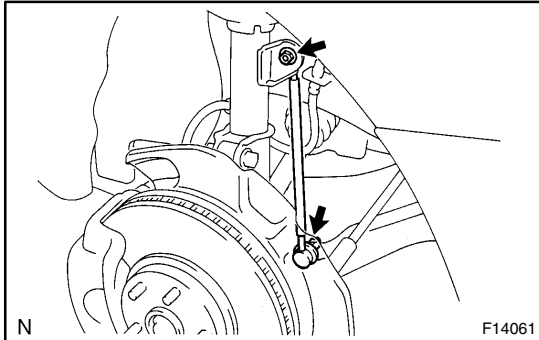
SA10H-05



REMOVAL

1. REMOVE LEFT AND RIGHT FRONT WHEELS

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



2. REMOVE LEFT AND RIGHT STABILIZER BAR LINKS

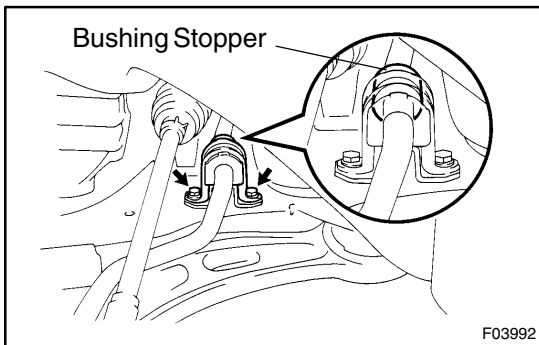
(a) Remove the 2 nuts and stabilizer bar link.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

HINT:

If the ball joint turns together with the nut, use a 5 mm hexagon wrench to hold the stud.

(b) Employ the same manner described above to the other side.



3. REMOVE LEFT AND RIGHT STABILIZER BAR BRACKETS AND BUSHINGS

(a) Remove the 2 bolts, bracket and bushing.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

HINT:

At the time of installation, install the bushing to the outside of the bushing stopper on the stabilizer bar.

(b) Employ the same manner described above to the other side.

4. REMOVE STABILIZER BAR

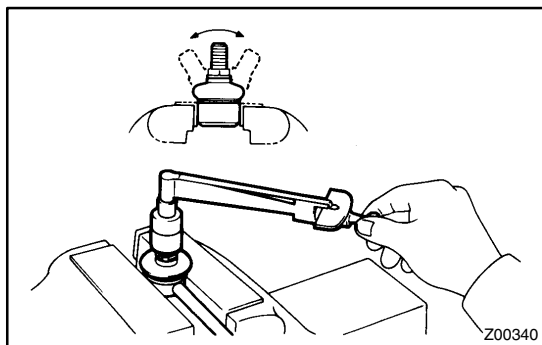
HINT:

At the time of installation, set the stabilizer bar with colored side at LH side.

5. REMOVE STOPPER CLAMP AND BUSHING STOPPER IF NECESSARY

(a) Using a screwdriver, remove the stopper clamp.

(b) Remove the bushing stopper.



INSPECTION

INSPECT STABILIZER BAR LINK BALL JOINT FOR ROTATION CONDITION

- (a) As shown in the illustration, flip the ball joint stud back and forth 5 times, before installing the nut.
- (b) Using a torque wrench, turn the nut continuously 1 turn per 2 – 4 seconds and take the torque reading on the 5th turn.

Turning torque:

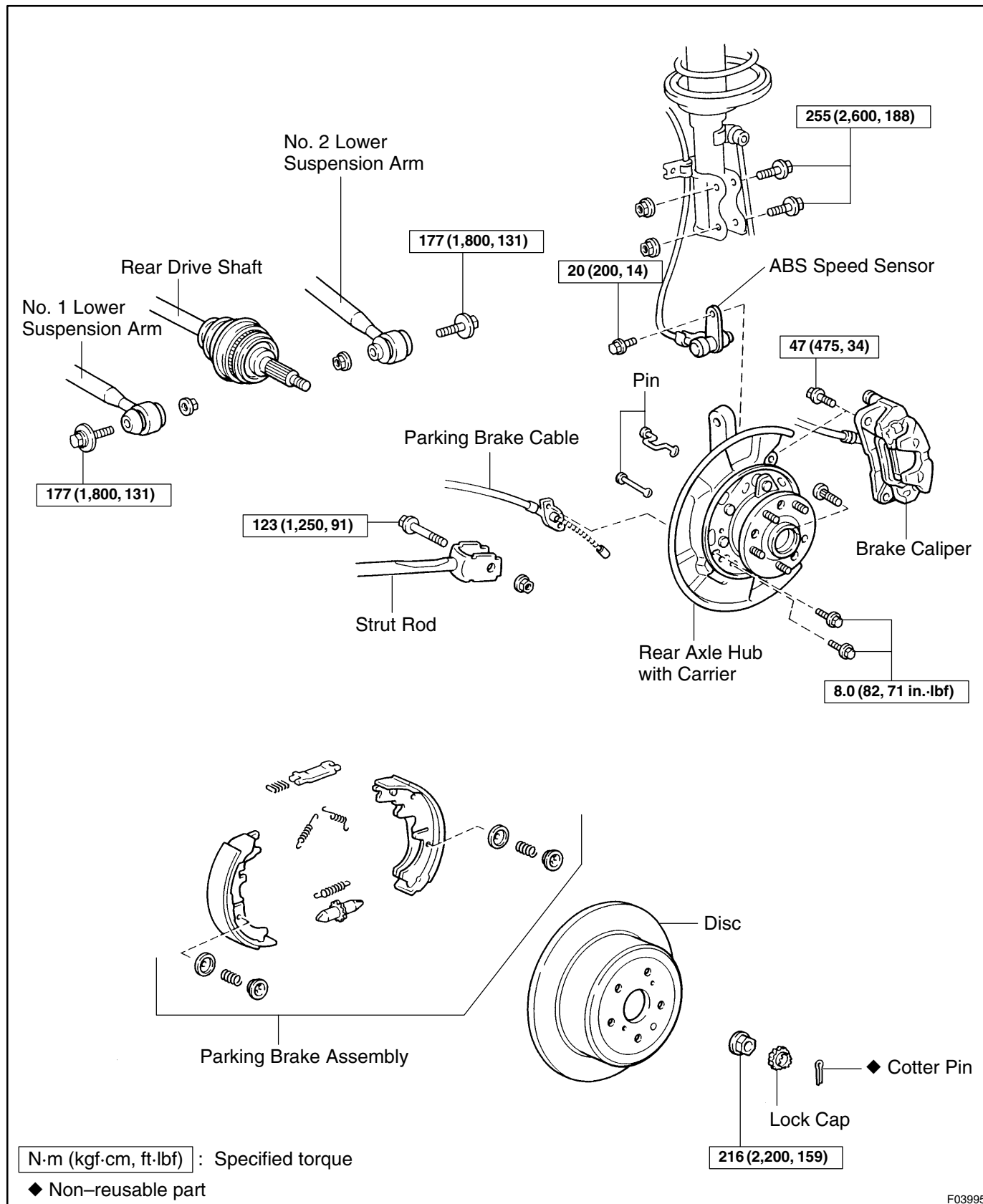
0.05 – 1.0 N·m (0.5 – 10 kgf·cm, 0.4 – 8.7 in.·lbf)

INSTALLATION

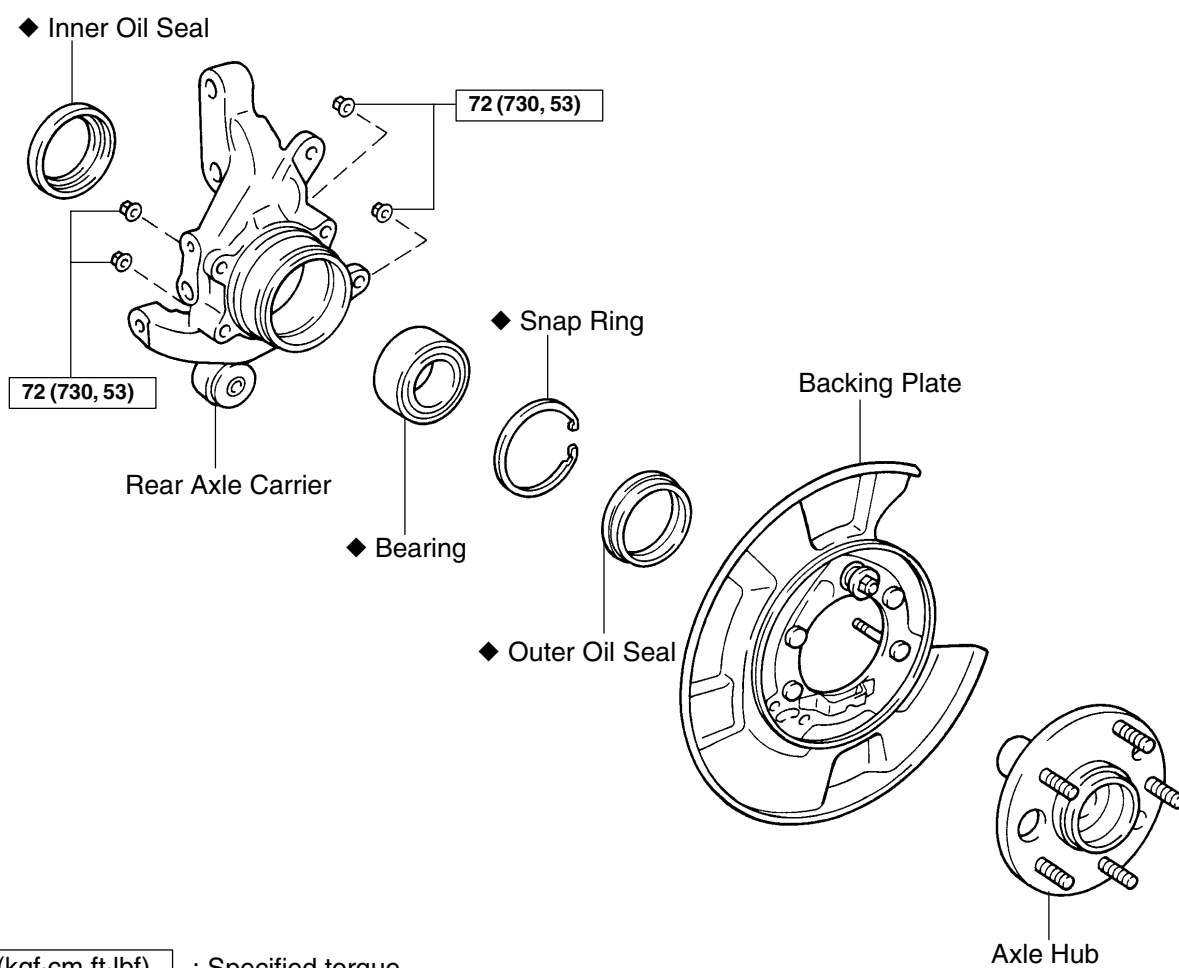
Installation is in the reverse order of removal (See page SA-40).

REAR AXLE HUB COMPONENTS

SA03E-03



F03995



N·m(kgf·cm,ft·lbf) : Specified torque

◆ Non-reusable part

F03993

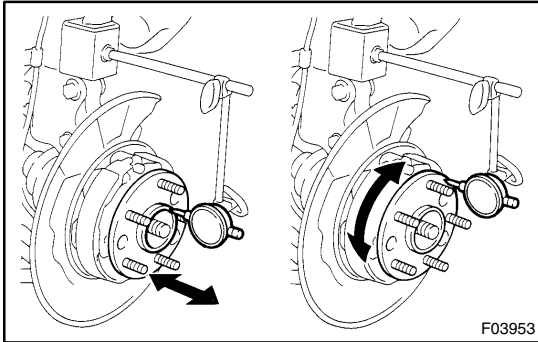
REMOVAL

1. REMOVE REAR WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

2. CHECK BEARING BACKLASH AND AXLE HUB DEVIATION

- Remove the 2 bolts, brake caliper and disc.
- Support the brake caliper securely.



- Using a dial indicator, check the backlash near the center of the axle hub.

Maximum: 0.05 mm (0.0020 in.)

If the backlash exceeds the maximum, replace the bearing.

- Using a dial indicator, check the deviation at the surface of the axle hub outside the hub bolt.

Maximum: 0.05 mm (0.0020 in.)

If the deviation exceeds the maximum, replace the bearing.

- Install the disc, brake caliper and 2 bolts.

Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)

3. REMOVE DRIVE SHAFT LOCK NUT

- Remove the cotter pin and lock cap.
- While applying the brakes, remove the nut.
- Remove the 2 bolts, brake caliper and disc.
- Support the brake caliper securely.

Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)

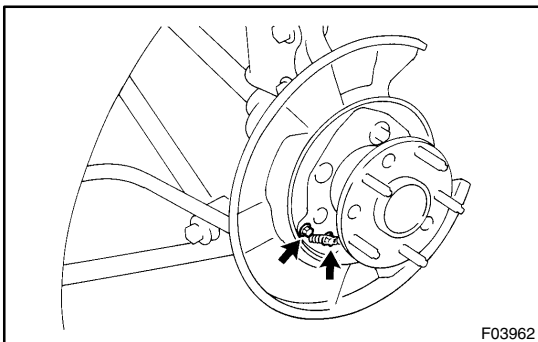
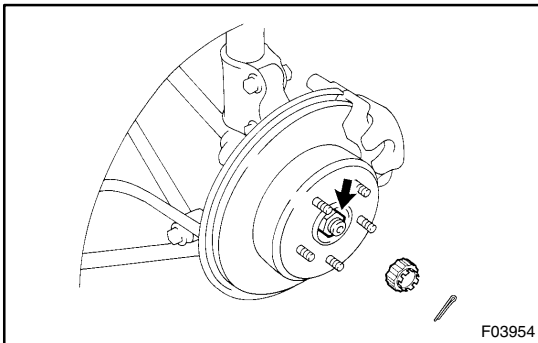
4. REMOVE ABS SPEED SENSOR

Remove the bolt and ABS speed sensor from the axle carrier.

Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)

5. DISASSEMBLE PARKING BRAKE ASSEMBLY

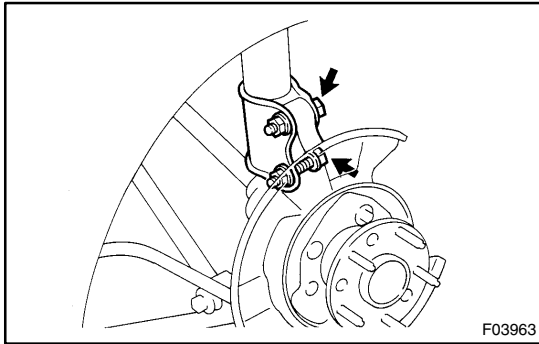
(See page BR-49)



6. DISCONNECT PARKING BRAKE CABLE

Remove the 2 bolts and disconnect parking brake cable from the backing plate.

Torque: 8.0 N·m (82 kgf·cm, 71 in·lbf)

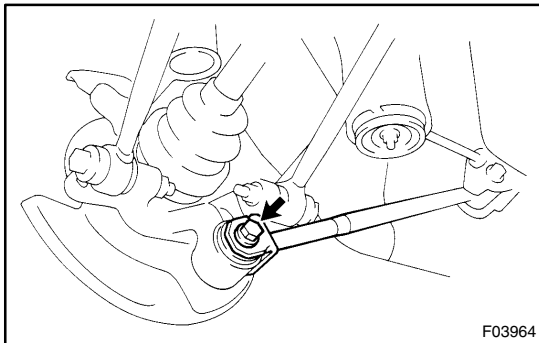


7. LOOSEN 2 BOLTS ON LOWER SIDE OF SHOCK ABSORBER

HINT:

Do not remove the 2 bolts and nuts.

Torque: 255 N·m (2,600 kgf·cm, 188 ft·lbf)



8. DISCONNECT STRUT ROD

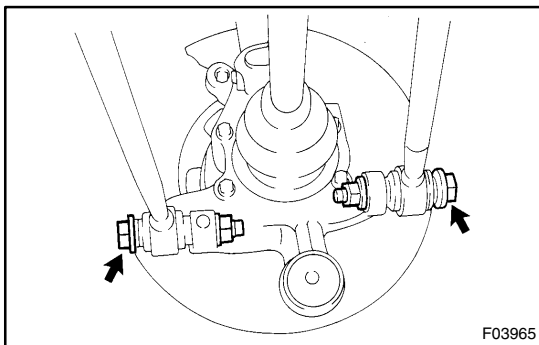
- (a) Remove the strut rod rear bolt and nut.

Torque: 123 N·m (1,250 kgf·cm, 91 ft·lbf)

HINT:

At the time of installation, after stabilizing the suspension, torque the bolt.

- (b) Disconnect the strut rod from the axle carrier.



9. DISCONNECT NO. 1 LOWER SUSPENSION ARM

- (a) Remove the No. 1 lower suspension arm set bolt and nut from the axle carrier.

Torque: 177 N·m (1,800 kgf·cm, 131 ft·lbf)

HINT:

At the time of installation, after stabilizing the suspension, torque the bolt.

- (b) Disconnect the No. 1 lower suspension arm from the axle carrier.

10. DISCONNECT NO. 2 LOWER SUSPENSION ARM

- (a) Remove the No. 2 lower suspension arm set bolt and nut from the axle carrier.

Torque: 177 N·m (1,800 kgf·cm, 131 ft·lbf)

HINT:

At the time of installation, after stabilizing the suspension, torque the bolt.

- (b) Disconnect the No. 2 lower suspension arm from the axle carrier.

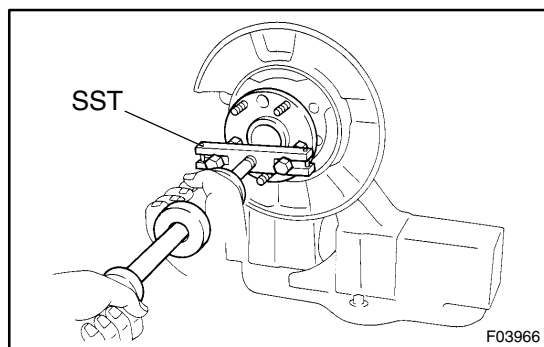
11. REMOVE REAR AXLE HUB WITH CARRIER

- (a) Remove the 2 nuts and bolts on the lower side of the shock absorber.

- (b) Remove the axle carrier with the axle hub.

NOTICE:

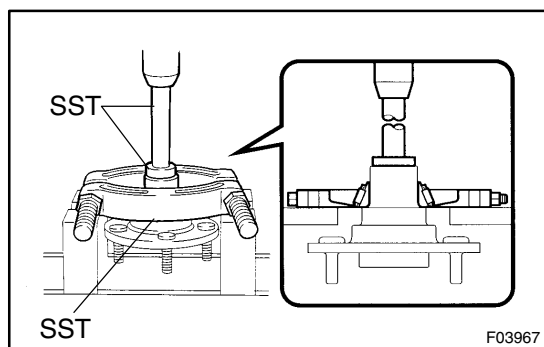
Be careful not to damage the boot, oil seal and ABS speed sensor rotor.



DISASSEMBLY

1. REMOVE AXLE HUB AND INNER RACE (INSIDE)

- (a) Using SST, remove the axle hub from the axle carrier.
SST 09520-00031
- (b) Remove the inner race (inside).

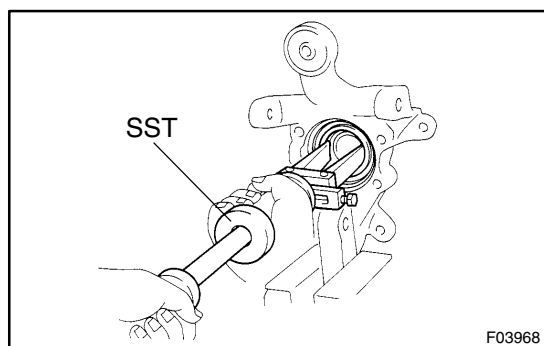


- (c) Using SST, and a press, remove the inner race (outside) from the axle hub.

SST 09555-55010, 09950-60010 (09951-00360),
09950-70010 (09951-07100)

2. REMOVE BACKING PLATE

Remove the 4 nuts and backing plate.



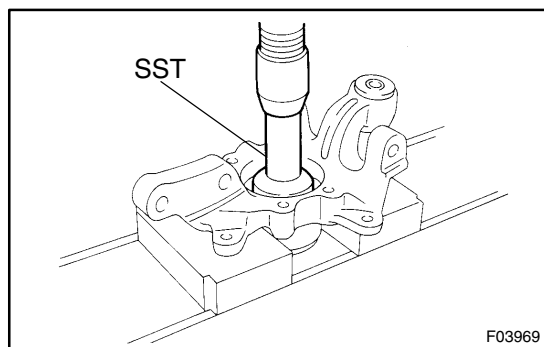
3. REMOVE INNER AND OUTER OIL SEALS

Using SST, remove the inner and outer oil seals.

SST 09308-00010

4. REMOVE SNAP RING

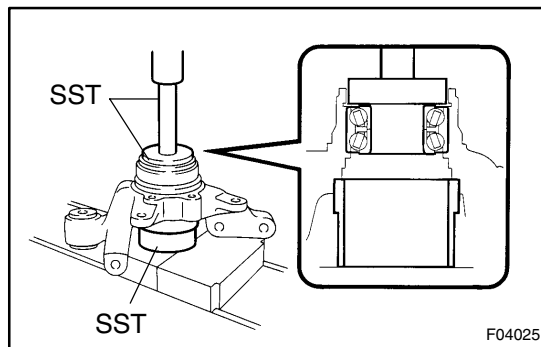
Using snap ring pliers, remove the snap ring.



5. REMOVE BEARING FROM REAR AXLE CARRIER

- (a) Place the inner race on the inside of the bearing.
- (b) Using SST and a press, remove the bearing from the axle carrier.

SST 09310-35010



REASSEMBLY

1. INSTALL BEARING

Using SST and a press, install the bearing to the axle carrier.

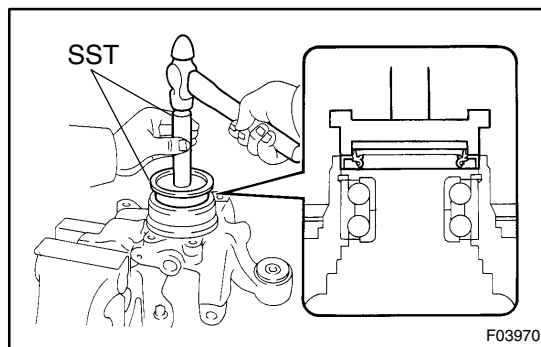
SST 09527-17011, 09950-60020 (09951-00710),
09950-70010 (09951-07100)

NOTICE:

If the inner race and balls become loose and come out from the bearing outer race, make sure to install them on the same side as before.

2. INSTALL SNAP RING

Using snap ring pliers, install a new snap ring.



3. INSTALL OUTER OIL SEAL

(a) Using SST and a hammer, install a new outer oil seal.

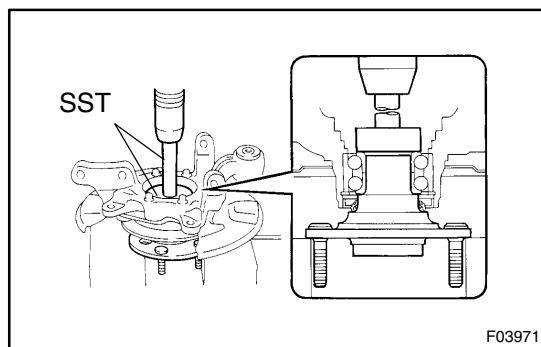
SST 09608-32010, 09950-70010 (09951-07100)

(b) Coat MP grease to the oil seal lip.

4. INSTALL BACKING PLATE

Install the backing plate with the 4 nuts.

Torque: 72 N·m (730 kgf·cm, 53 ft·lbf)



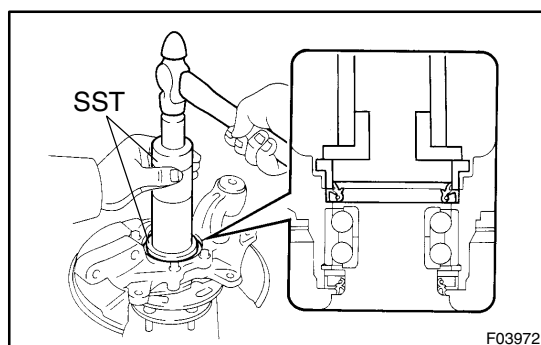
5. INSTALL AXLE HUB

Using SST and a press, install the axle hub.

SST 09950-60020 (09951-00730),
09950-70010 (09951-07100)

NOTICE:

Be careful not to damage the bearing.



6. INSTALL INNER OIL SEAL

(a) Using SST and a hammer, install a new inner oil seal.

SST 09316-60011 (09316-00011, 09316-00031),
09502-12010

(b) Coat MP grease to the oil seal lip.

INSTALLATION

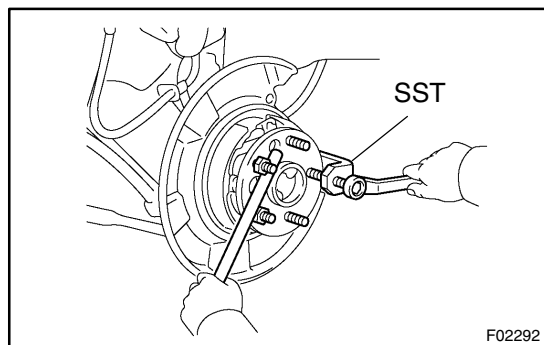
Installation is in the reverse order of removal (See page SA-45).

HINT:

After installation, check the ABS speed sensor signal (See page DI-205) and rear wheel alignment (See page SA-8).

REAR WHEEL HUB BOLT REPLACEMENT

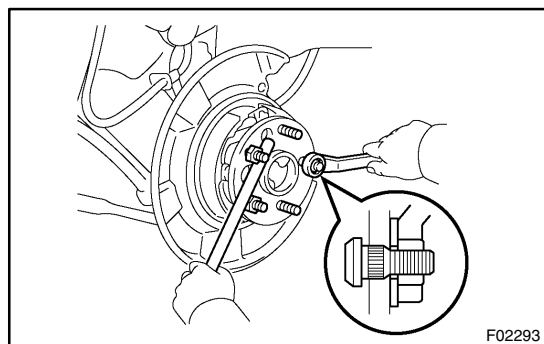
1. **REMOVE REAR WHEEL**
2. **REMOVE BRAKE CALIPER AND DISC**
 - (a) Remove the 2 bolts, brake caliper and disc.
 - (b) Support the brake caliper securely.



3. **REMOVE HUB BOLT**

Using SST, remove the hub bolt.

SST 09628-10011



4. **INSTALL HUB BOLT**

- (a) Install a washer and nut to the hub bolt, as shown in the illustration.
- (b) Install the hub bolt by torquing the nut.

5. **INSTALL BRAKE DISC AND CALIPER**

Install the disc, brake caliper and 2 bolts.

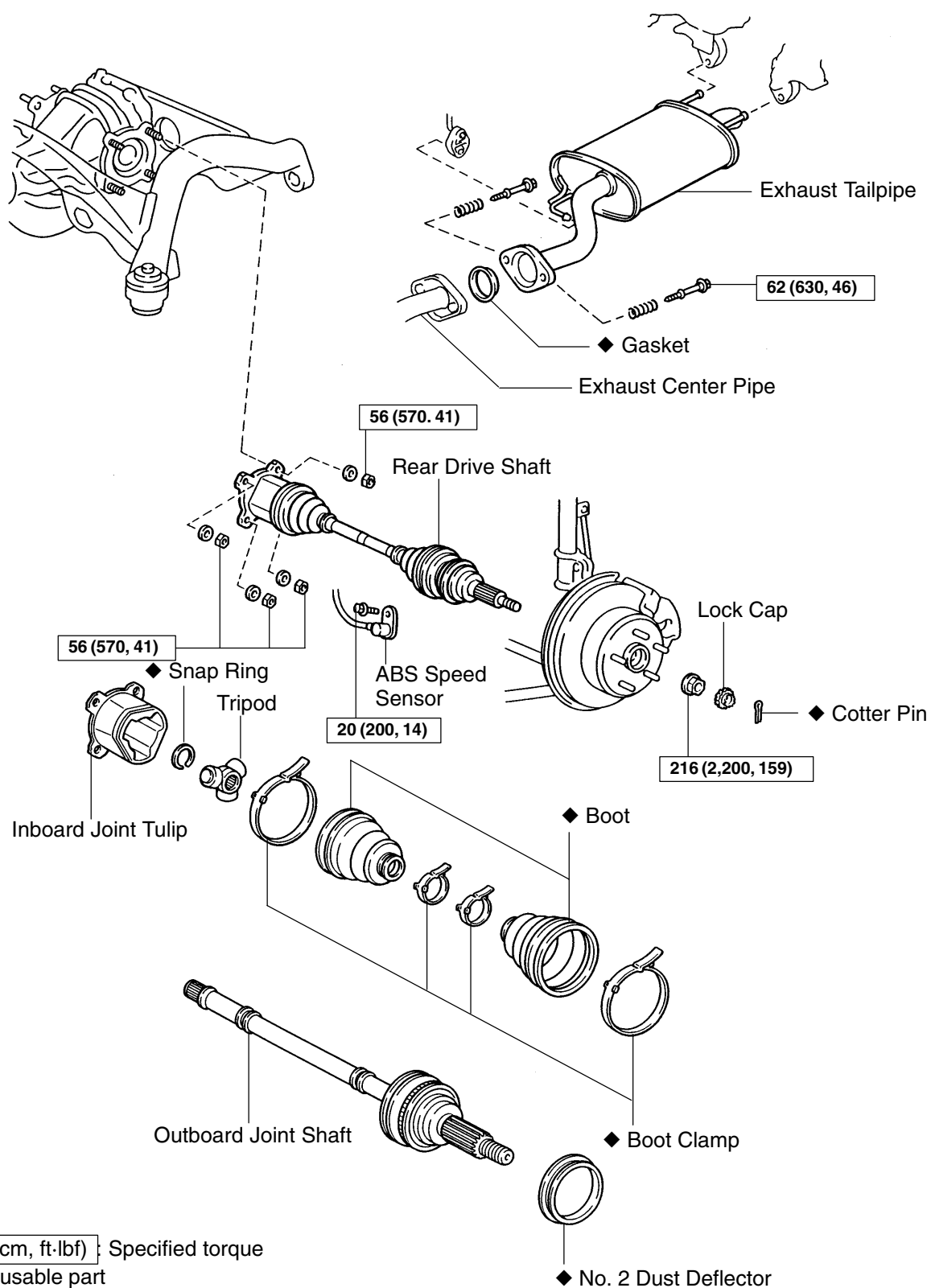
Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)

6. **INSTALL REAR WHEEL**

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

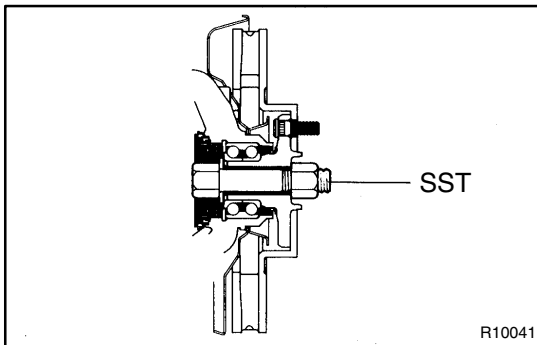
REAR DRIVE SHAFT COMPONENTS

SA0UB-04



N

F12950



REMOVAL

NOTICE:

- The hub bearing could be damaged if it is subjected to the vehicle weight, such as when moving the vehicle with the drive shaft removed. Therefore, if it is absolutely necessary to place the vehicle weight on the hub bearing, first support it with SST.
SST 09608-16042 (09608-02021, 09608-02041)
- After disconnecting the drive shaft from the axle hub, work carefully so as not to damage the ABS speed sensor rotor serration on the drive shaft.

1. REMOVE REAR WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

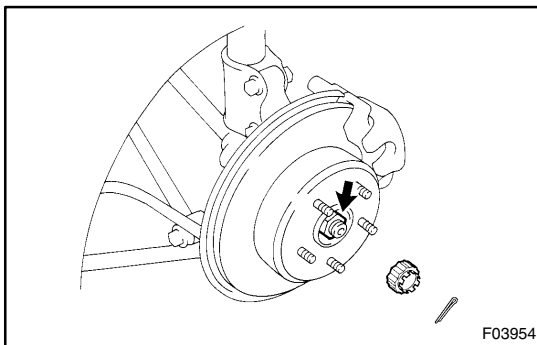
2. REMOVE EXHAUST TAILPIPE

Remove the 2 bolts, gasket and exhaust tailpipe.

Torque: 62 N·m (630 kgf·cm, 46 ft·lbf)

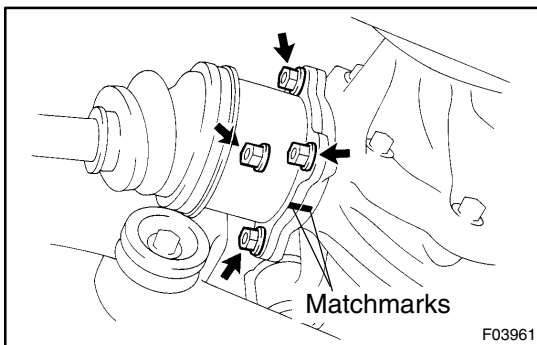
3. REMOVE BOLT AND ABS SPEED SENSOR

Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)



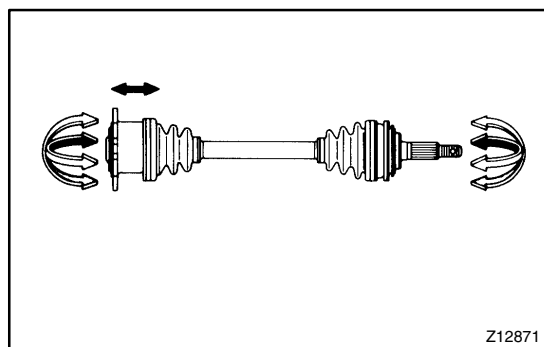
4. REMOVE DRIVE SHAFT LOCK NUT

- Remove the cotter pin and lock cap.
- While applying the brakes, remove the nut.
Torque: 216 N·m (2,200 kgf·cm, 159 ft·lbf)



5. REMOVE DRIVE SHAFT

- Place matchmarks on the drive shaft and differential side gear shaft.
- Remove the 4 nuts and washers, and disconnect the drive shaft from the differential side gear shaft.
Torque: 56 N·m (570 kgf·cm, 41 ft·lbf)
- Remove the drive shaft from the axle carrier.



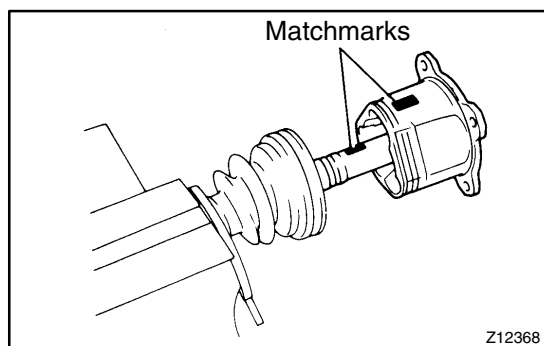
DISASSEMBLY

1. CHECK DRIVE SHAFT

- Check to see that there is no remarkable play in the outboard joint.
- Check to see that the inboard joint slides smoothly in the thrust direction.
- Check to see that there is no remarkable play in the radial direction of the inboard joint.
- Check the boots for damage.

2. REMOVE INBOARD AND OUTBOARD JOINT BOOT CLAMPS

Using a screwdriver, remove the 4 boot clamps.



3. REMOVE INBOARD JOINT TULIP

- Place matchmarks on the inboard joint tulip and outboard joint shaft.

NOTICE:

Do not punch the marks.

- Remove the inboard joint tulip from the outboard joint shaft.

4. REMOVE TRIPOD

- Using a snap ring expander, remove the snap ring.

- Place matchmarks on the outboard joint shaft and tripod.

NOTICE:

Do not punch the marks.

- Using a brass bar and hammer, remove the tripod from the outboard joint shaft.

NOTICE:

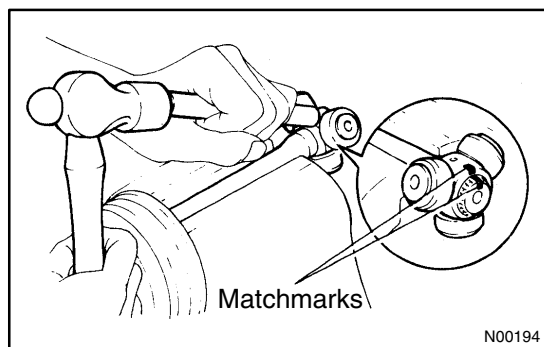
Do not tap the roller.

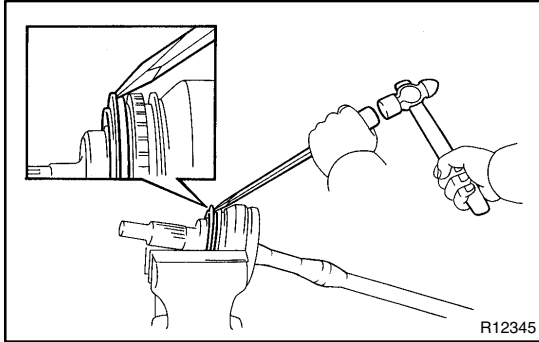
5. REMOVE INBOARD AND OUTBOARD JOINT BOOTS AND CLAMPS

Slide out the 2 boots and 4 clamps.

NOTICE:

Do not disassemble the outboard joint.

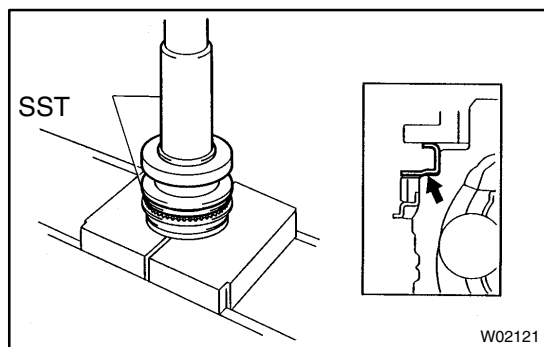


**6. REMOVE NO. 2 DUST DEFLECTOR**

- (a) Mount outboard joint shaft in a soft jaw vise.
- (b) Using a screwdriver and hammer, remove the No. 2 dust deflector.

NOTICE:

Be careful not to damage the ABS speed sensor rotor.



REASSEMBLY

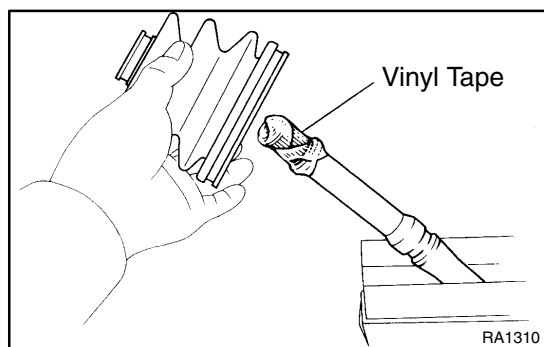
1. INSTALL NEW NO. 2 DUST DEFLECTOR

Using SST and a press, install a new No. 2 dust deflector.

SST 09309-36010, 09316-20011

NOTICE:

Be careful not to damage the ABS speed sensor rotor.



2. TEMPORARILY INSTALL NEW OUTBOARD AND IN-BOARD JOINT BOOTS AND 4 BOOT CLAMPS

HINT:

Before installing the boots, wrap the spline of the outboard joint shaft with vinyl tape to prevent the boots from being damaged.

3. INSTALL TRIPOD

- Place the beveled side of the tripod axial spline toward the outboard joint.
- Align the matchmarks placed before removal.
- Using a brass bar and hammer, tap in the tripod to the outboard joint shaft.

NOTICE:

Do not tap the roller.

- Using a snap ring expander, install a new snap ring.

4. INSTALL INBOARD JOINT TULIP

- Pack the inboard joint and boot with grease in the boot kit.

Grease capacity: (Color = Yellow)

180 – 190 g (6.35 – 6.70 oz.)

- Align the matchmarks placed before removal, and install the inboard joint tulip to the outboard joint shaft.

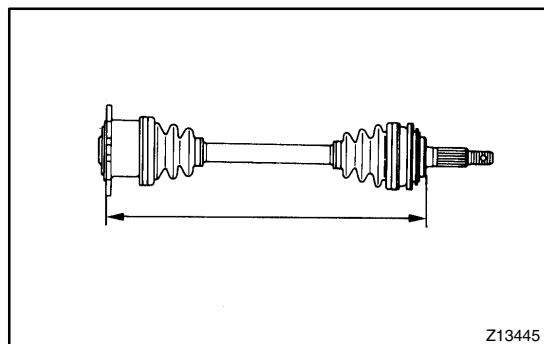
5. ASSEMBLE BOOT CLAMPS TO BOTH BOOTS

- Before assembling the boots, pack the outboard joint and boot with grease in the boot kit.

Grease capacity: (Color = Gray)

107 – 117 g (3.77 – 4.13 oz.)

- Make sure that the 2 boots are on the shaft groove.



- Make sure that the 2 boots are not stretched or contracted when the drive shaft is at standard length.

Standard length: 607.7 ± 5.0 mm (23.93 ± 0.20 in.)

- Place 4 new boot clamps to the 2 boots.
- Bend the band and lock it with a screwdriver.

INSTALLATION

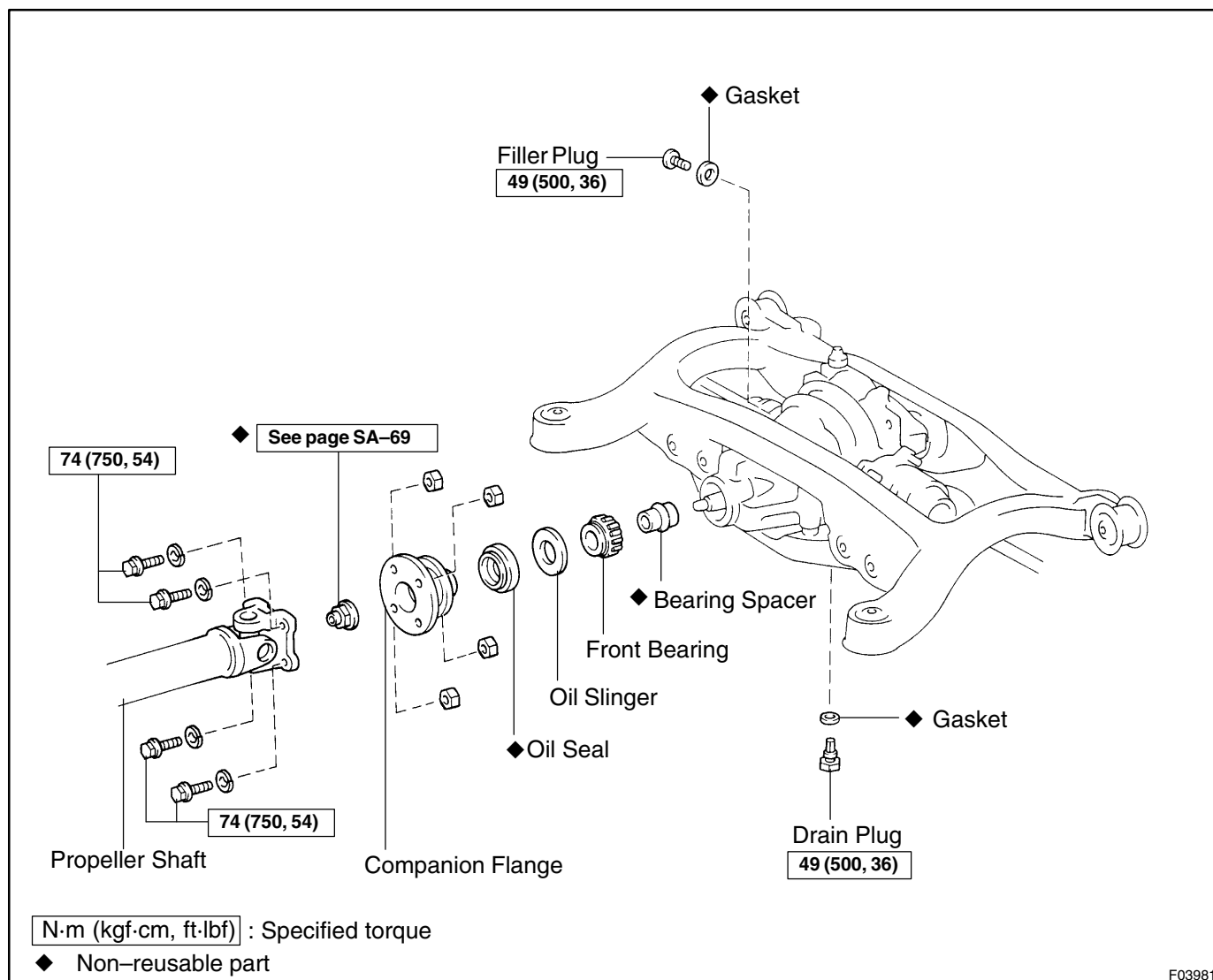
Installation is in the reverse order of removal (See page SA-52).

HINT:

After installation, check the ABS speed sensor signal (See page DI-205) and rear wheel alignment (See page SA-8).

REAR DIFFERENTIAL FRONT OIL SEAL COMPONENTS

SA0UG-09



F03981

REPLACEMENT

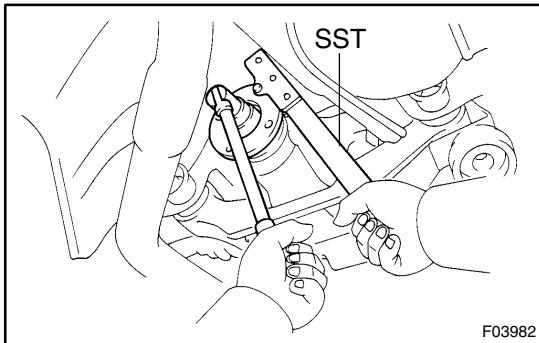
1. DRAIN HYPOID GEAR OIL

Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

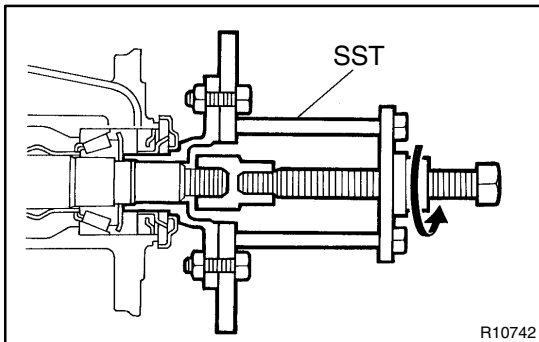
2. REMOVE PROPELLER SHAFT (See page PR-3)

3. REMOVE COMPANION FLANGE

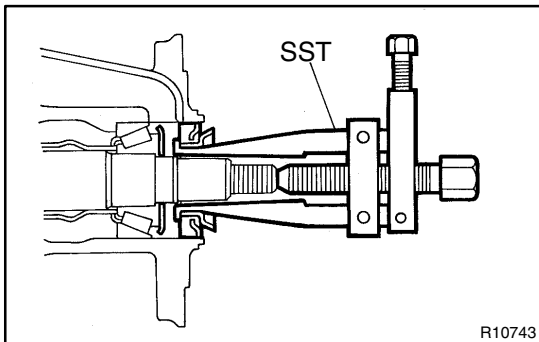
- (a) Using a chisel and hammer, unstake the staked part of the nut.



- (b) Using SST to hold the flange, remove the nut.
SST 09330-00021

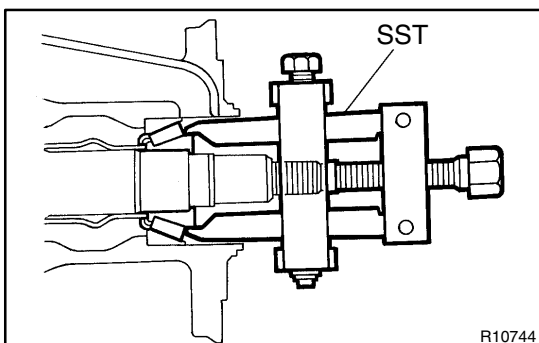


- (c) Using SST, remove the companion flange.
SST 09950-30011 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03020)



4. REMOVE FRONT OIL SEAL AND OIL SLINGER

- (a) Using SST, remove the oil seal.
SST 09308-10010
- (b) Remove the oil slinger.



5. REMOVE FRONT BEARING AND BEARING SPACER

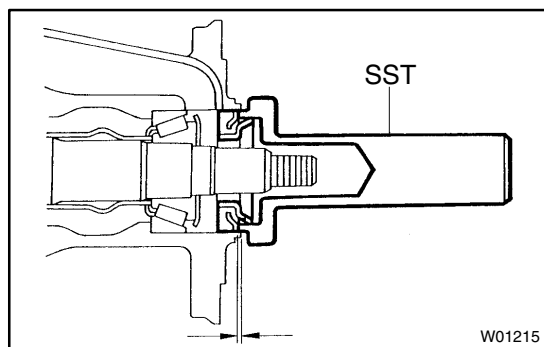
- (a) Using SST, remove the front bearing.
SST 09556-22010
- (b) Remove the bearing spacer.

6. INSTALL NEW BEARING SPACER AND FRONT BEARING

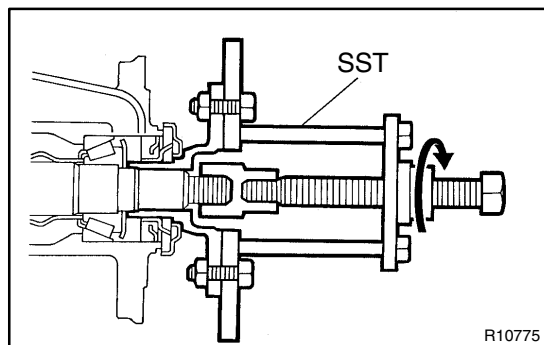
- (a) Install a new bearing spacer on the shaft.
(b) Install the front bearing on the shaft.

7. INSTALL OIL SLINGER AND NEW OIL SEAL

- (a) Install the oil slinger.

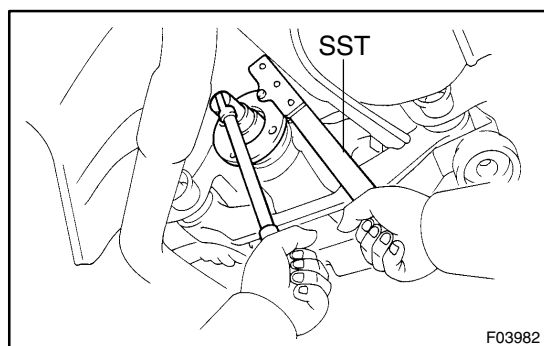


- (b) Using SST, install a new oil seal.
SST 09554-22010
Oil seal drive in depth: 2.0 mm (0.079 in.)
- (c) Coat MP grease to the oil seal lip.



8. INSTALL COMPANION FLANGE

- (a) Using SST, install the companion flange on the shaft.
SST 09950-30011 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03020)
- (b) Coat the threads of a new nut with hypoid gear oil.



- (c) Using SST to hold the flange, torque the nut.
SST 09330-00021

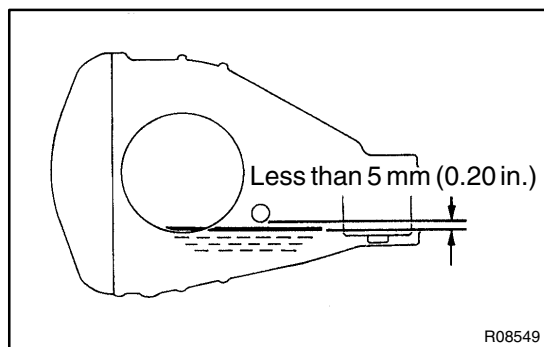
Torque: 108 N·m (1,100 kgf·cm, 80 ft·lbf)

9. ADJUST DRIVE PINION PRELOAD

(See page SA-69)

10. STAKE DRIVE PINION NUT

11. INSTALL PROPELLER SHAFT (See page PR-10)



12. FILL DIFFERENTIAL WITH HYPOID GEAR OIL

Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

Oil grade: Hypoid gear oil API GL-5

Recommended oil viscosity:

Above -18°C (0°F) SAE 90

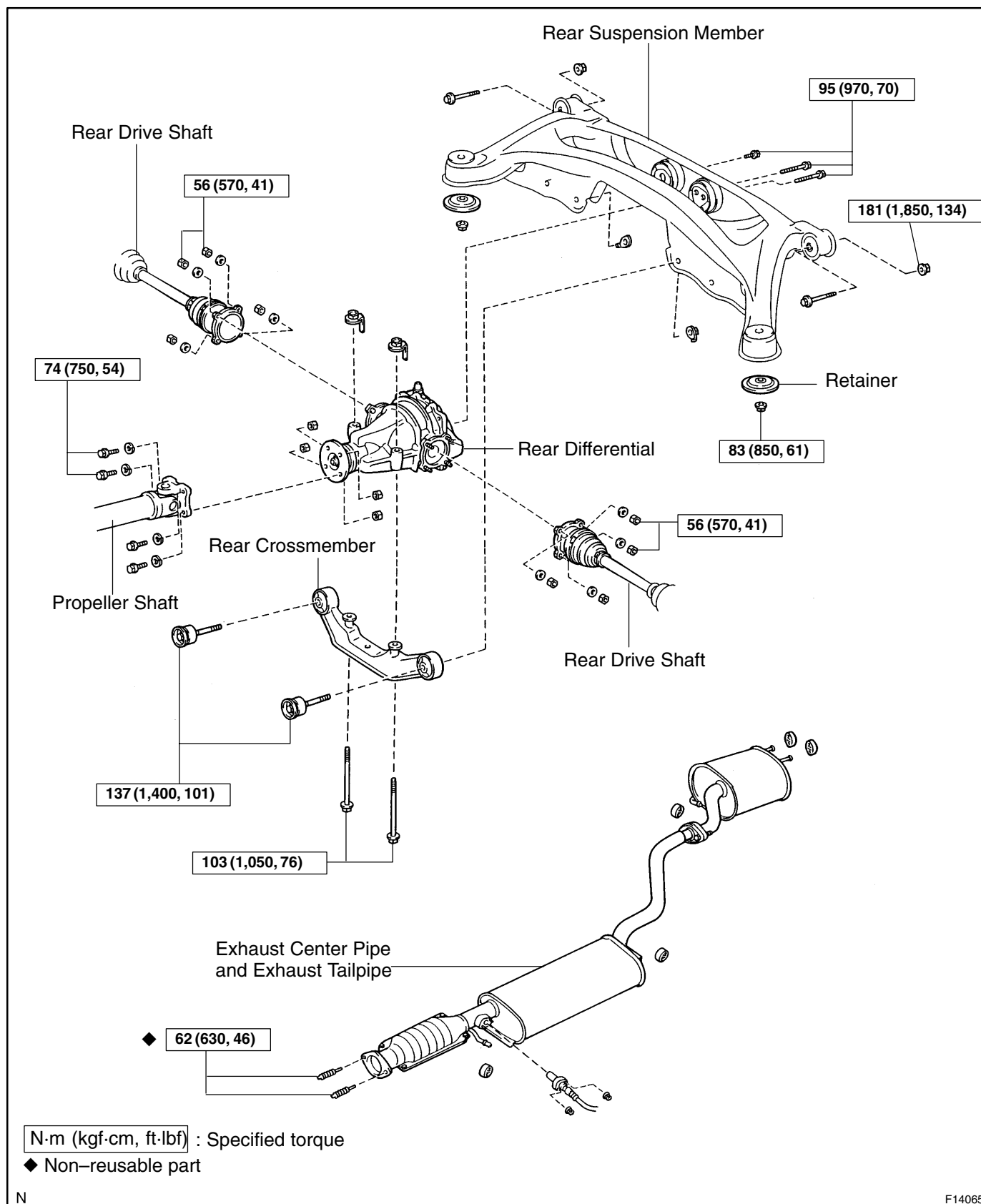
Below -18°C (0°F) SAE 80W or 80W-90

Capacity:

0.9 ± 0.05 liters (0.95 ± 0.05 US qts, 0.79 ± 0.04 Imp. qts)

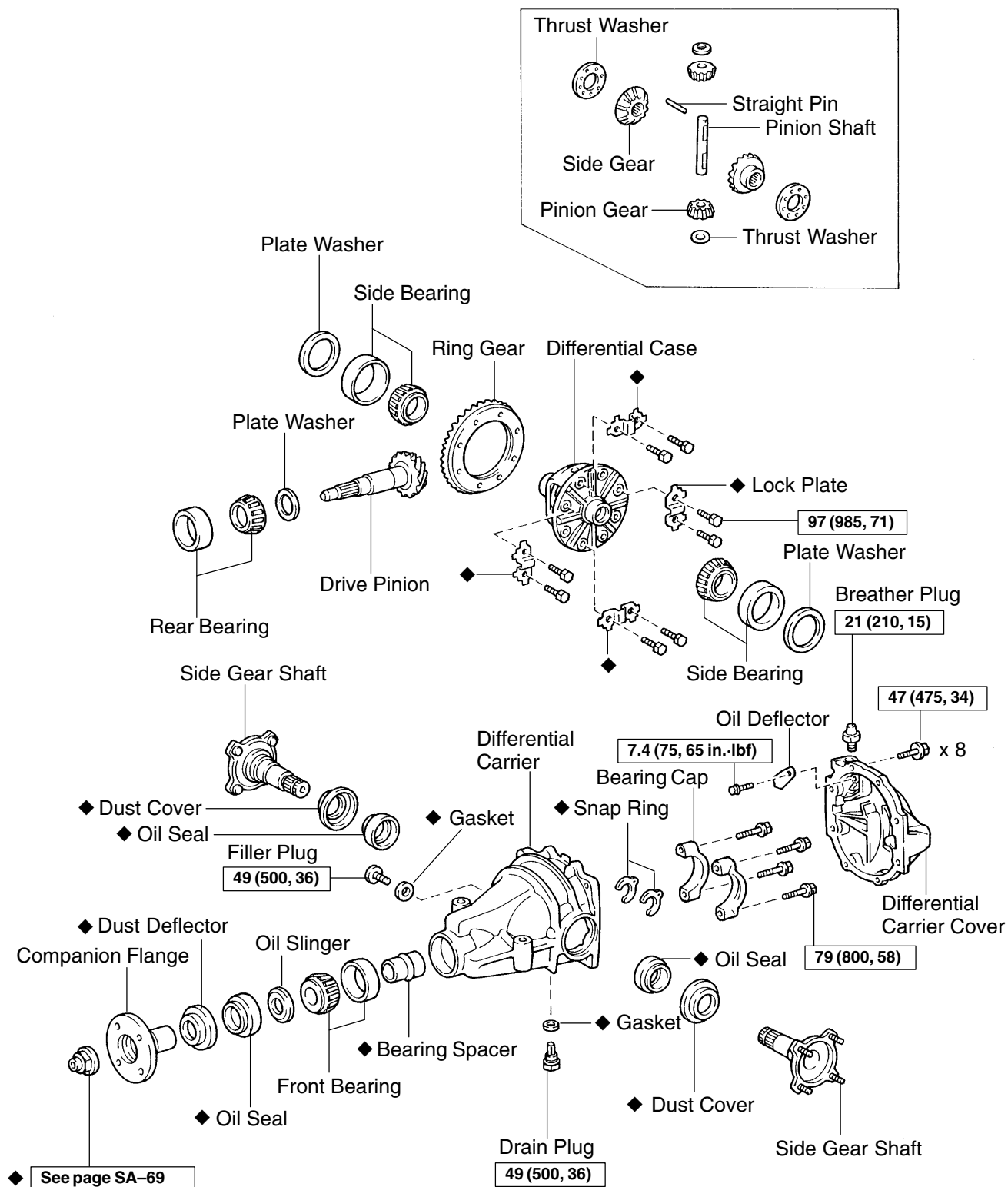
ELECTRONIC MODULATED AIR SUSPENSION SYSTEM COMPONENTS

SA0UI-06



N

F14065



N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

REMOVAL

1. DISCONNECT REAR DRIVE SHAFTS (See page SA-52)

HINT:

Support the drive shafts securely.

2. DISCONNECT PROPELLER SHAFT (See page PR-3)

HINT:

Support the propeller shaft securely.

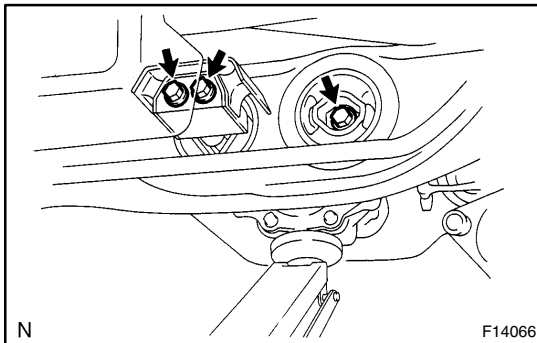
3. DRAIN HYPOID GEAR OIL

Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

4. REMOVE EXHAUST CENTER PIPE AND EXHAUST TAILPIPE

Remove the 2 bolts, exhaust center pipe and exhaust tail pipe.

Torque: 43 N·m (440 kgf·cm, 32 ft·lbf)

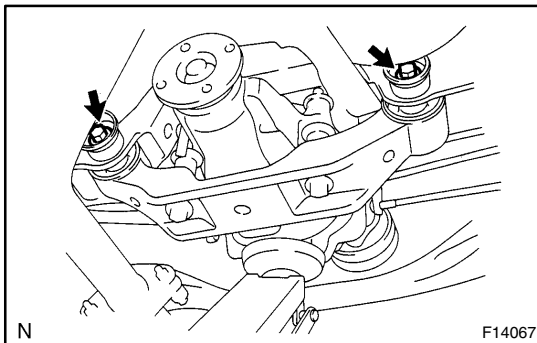


5. REMOVE DIFFERENTIAL

(a) Support the differential with a jack.

(b) Loosen the 3 rear mounting bolts.

Torque: 95 N·m (970 kgf·cm, 70 ft·lbf)



(c) Loosen the 2 bolts.

Torque: 137 N·m (1,400 kgf·cm, 101 ft·lbf)

(d) Support the rear suspension member.

(e) Remove the 4 nuts, 2 bolts and 2 retainers from the rear suspension member.

Torque:

Front side: 83 N·m (850 kgf·cm, 61 ft·lbf)

Rear side: 181 N·m (1,850 kgf·cm, 134 ft·lbf)

(f) Lower the differential with the rear suspension member.

(g) Remove the loosened 5 bolts, 2 nuts and differential.

(h) Remove the 2 bolts, nuts and rear crossmember from the differential.

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

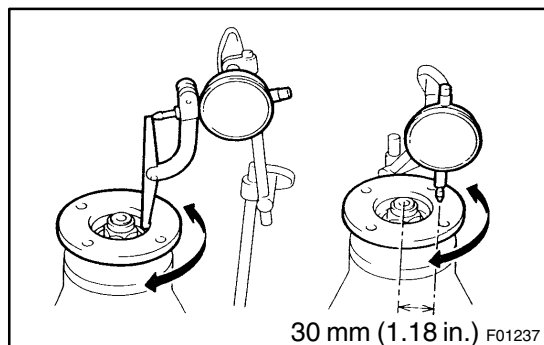
(i) Remove the bolt and damper.

Torque: 27 N·m (270 kgf·cm, 20 ft·lbf)

DISASSEMBLY

1. REMOVE DIFFERENTIAL CARRIER COVER

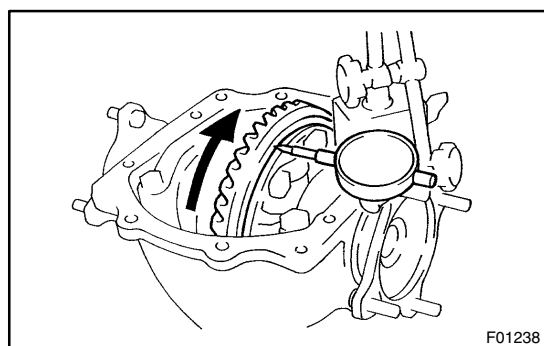
- Remove the 8 bolts from the carrier cover.
- Using a brass bar and hammer, separate the cover from carrier.
- Remove the breather plug from the differential carrier cover.
- Remove the bolt and oil deflector from the differential carrier cover.



2. CHECK RUNOUT OF COMPANION FLANGE

Using a dial indicator, measure the runout of the companion flange vertically and horizontally.

Maximum runout: 0.10 mm (0.0039 in.)

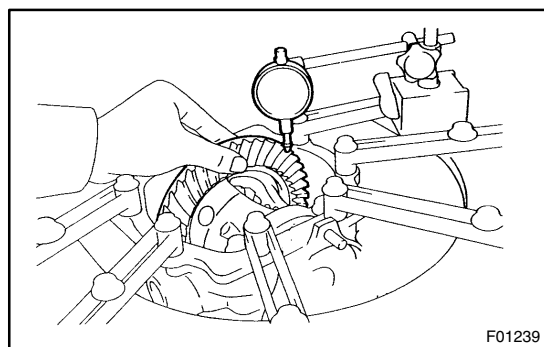


3. CHECK RING GEAR RUNOUT

Using a dial indicator, check the runout of the ring gear.

Maximum runout: 0.07 mm (0.0028 in.)

If the runout is greater than the maximum, replace the ring gear with new one.



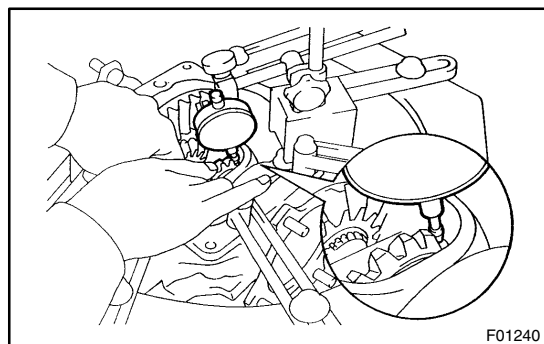
4. CHECK RING GEAR BACKLASH

Using a dial indicator, check the backlash of the ring gear.

Backlash: 0.13 – 0.18 mm (0.0051 – 0.0071 in.)

If the backlash is not within the specification, adjust the side bearing preload or repair as necessary.

5. CHECK TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION (See page SA-69)

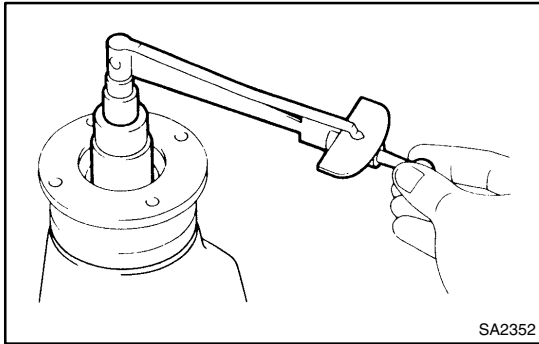


6. CHECK SIDE GEAR BACKLASH

Using a dial indicator, check the backlash of the side gear while holding 1 pinion gear toward the differential case.

Backlash: 0.05 – 0.20 mm (0.0020 – 0.0079 in.)

If the backlash is not within the specification, install the 2 side gear thrust washers of different thickness (See page SA-69).



7. MEASURE DRIVE PINION PRELOAD

Using a torque wrench, measure the preload of the backlash between the drive pinion and ring gear.

Preload (at starting):

0.6 – 0.9 N·m (6 – 9 kgf·cm, 5.2 – 7.8 in.·lbf)

8. CHECK TOTAL PRELOAD

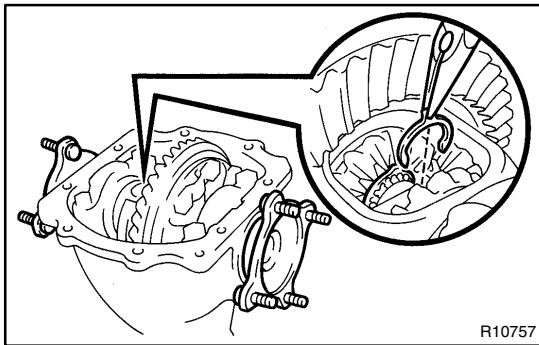
Using a torque wrench, measure the total preload.

Total preload (at starting):

Drive pinion preload plus

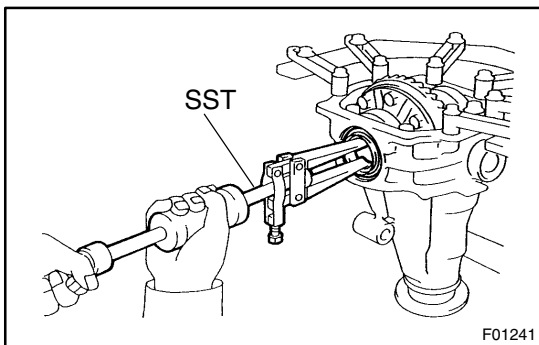
0.3 – 0.5 N·m (3 – 5 kgf·cm, 2.6 – 4.3 in.·lbf)

If necessary, disassemble and inspect the differential.



9. REMOVE SIDE GEAR SHAFTS

- Using needle nose pliers, remove the 2 snap rings from the 2 side gear shafts.
- Remove the 2 side gear shafts.



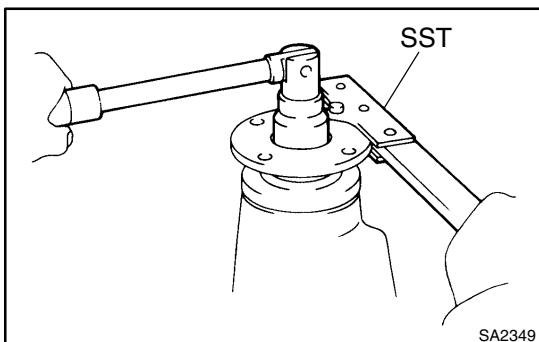
10. REMOVE SIDE GEAR SHAFT OIL SEALS

Using SST, remove the 2 oil seals from the housing.

SST 09308-00010

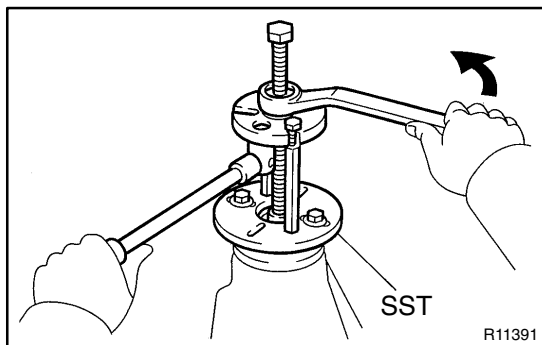
11. REMOVE COMPANION FLANGE

- Using a chisel and hammer, unstake the staked part of the nut.

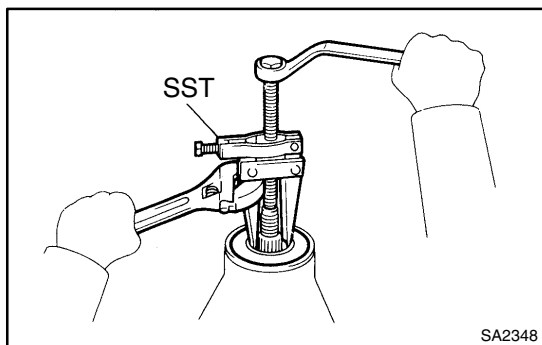


- Using SST to hold the flange, remove the nut.

SST 09330-00021

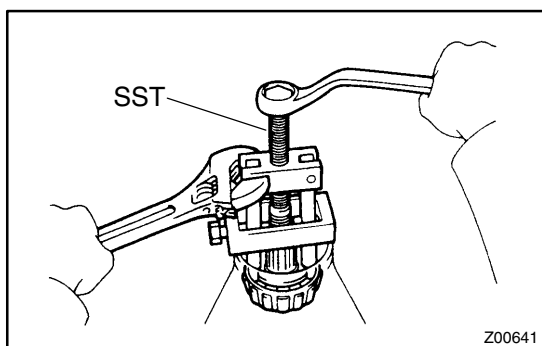


- (c) Using SST, remove the companion flange.
SST 09950-30011 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03020)



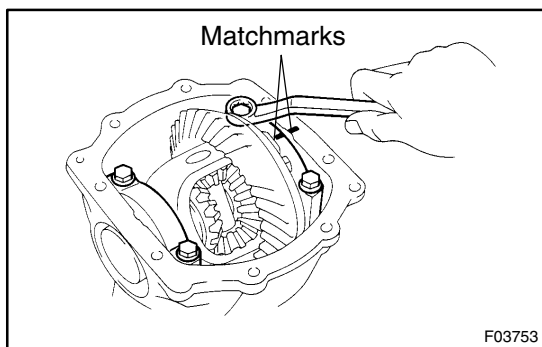
12. REMOVE FRONT OIL SEAL AND OIL SLINGER

- (a) Using SST, remove the oil seal from the differential carrier.
SST 09308-10010
(b) Remove the oil slinger.



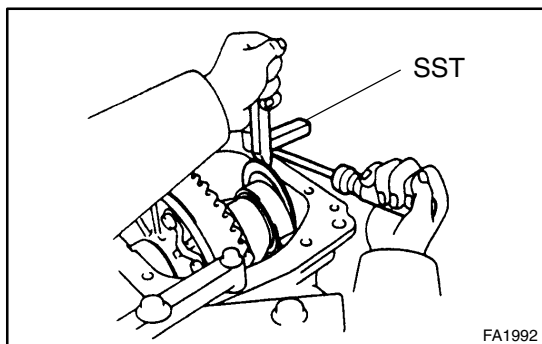
13. REMOVE FRONT BEARING AND BEARING SPACER

- (a) Using SST, remove the front bearing from the drive pinion.
SST 09556-22010
(b) Remove the bearing spacer.



14. REMOVE DIFFERENTIAL CASE ASSEMBLY

- (a) Place matchmarks on the bearing cap and differential carrier.
(b) Remove the 4 bolts and 2 bearing caps.



- (c) Using SST and a hammer, remove the 2 plate washers.
SST 09504-22011

HINT:

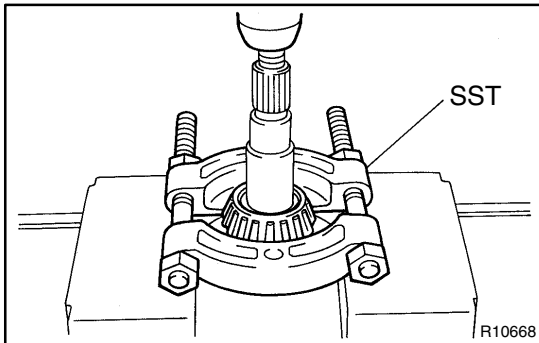
Measure the plate washer and note down the thickness.

- (d) Remove the differential case assembly and 2 bearing outer races from the differential carrier.

HINT:

Tag the 2 bearing outer races to show the location for reassembling.

15. REMOVE DRIVE PINION FROM DIFFERENTIAL CARRIER



16. REMOVE DRIVE PINION REAR BEARING

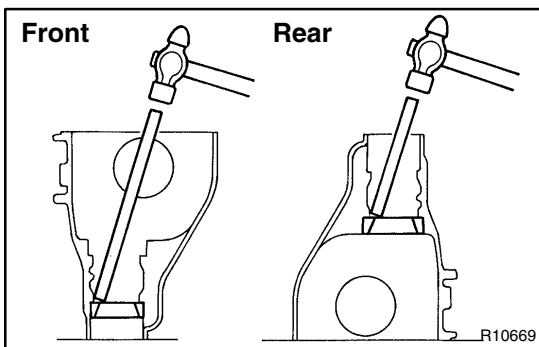
- (a) Using SST and a press, remove the rear bearing from the drive pinion.

SST 09950-00020

HINT:

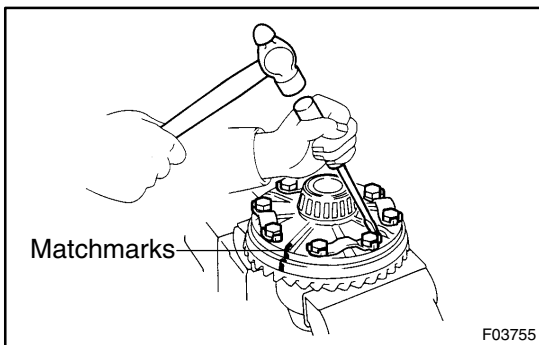
If the drive pinion or ring gear are damaged, replace them as a set.

- (b) Remove the plate washer.



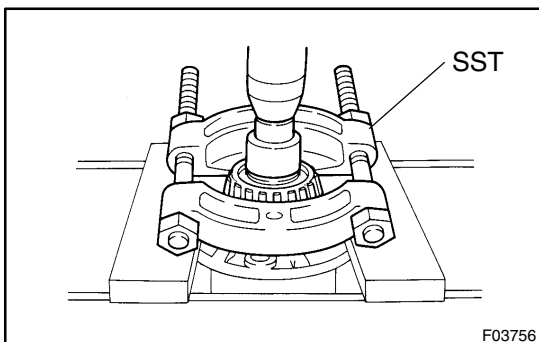
17. REMOVE FRONT AND REAR BEARING OUTER RACES

Using a brass bar and hammer, remove the 2 outer races from the carrier.



18. REMOVE RING GEAR

- (a) Place matchmarks on the ring gear and differential case.
 (b) Using a screwdriver and hammer, unstick the 4 lock plates.
 (c) Remove the 8 ring gear set bolts and 4 lock plates.
 (d) Using a plastic hammer, tap on the ring gear to separate it from the differential case.



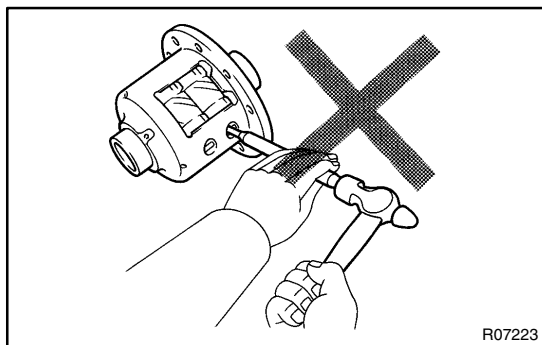
19. REMOVE SIDE BEARINGS

Using SST and a press, remove the 2 side bearings from the differential case.

SST 09950-00020

NOTICE:

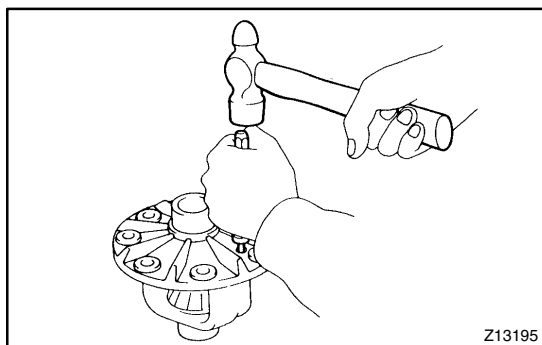
Be careful not to drop the differential case.



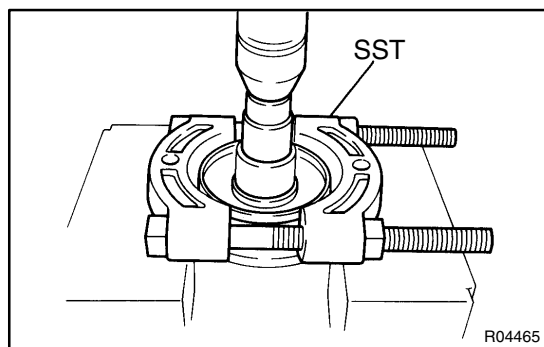
20. DISASSEMBLE DIFFERENTIAL CASE

NOTICE:

If equipped with torque sensing LSD, do not disassemble the differential case.



- (a) Using a pin punch and hammer, remove the straight pin.
- (b) Remove the pinion shaft.
- (c) Remove the 2 pinion gears.
- (d) Remove the 2 pinion gear thrust washers.
- (e) Remove the 2 side gears.
- (f) Remove the 2 side gear thrust washers.



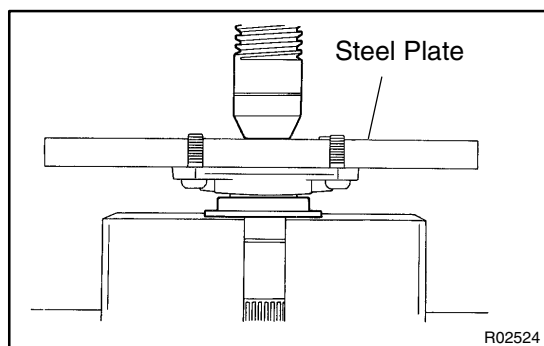
REPLACEMENT

1. REPLACE COMPANION FLANGE DUST DEFLECTOR, IF NECESSARY

- (a) Using SST and a press, remove the dust deflector.
SST 09950-00020
- (b) Using a press, install a new dust deflector.

2. REPLACE SIDE GEAR SHAFT DUST COVER, IF NECESSARY

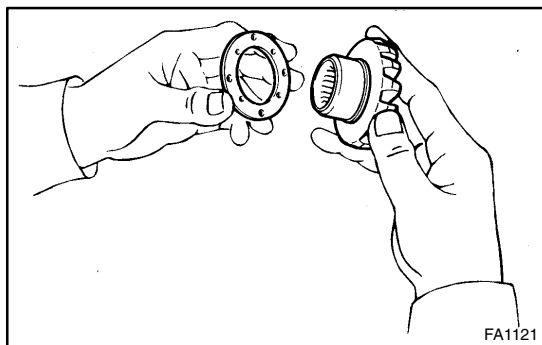
- (a) Using a screwdriver and hammer, remove the side gear shaft dust cover.



- (b) Using a steel plate and press, install a new dust cover to the side gear shaft.

NOTICE:

Be careful not to damage the dust cover.



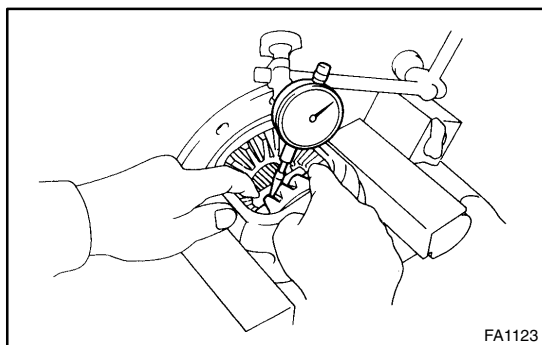
REASSEMBLY

1. REASSEMBLE DIFFERENTIAL CASE

- Install the 2 thrust washers on the 2 side gears.
- Install the 2 side gears, 2 pinion gears, 2 pinion gear thrust washers and pinion shaft in the differential case.

HINT:

Align the holes of the differential case and pinion shaft.



- Measure the side gear backlash while holding 1 pinion gear toward the differential case.

Backlash: 0.05 – 0.20 mm (0.0020 – 0.0079 in.)

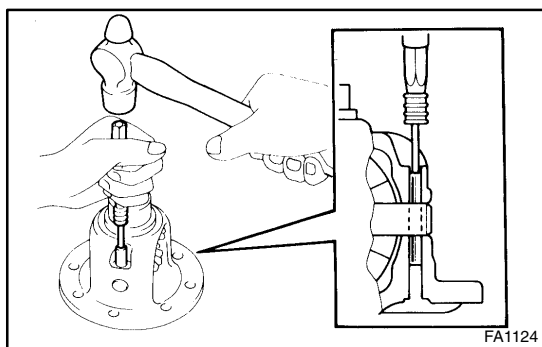
If the backlash is not within the specification, install the 2 side gear thrust washers with different thicknesses.

HINT:

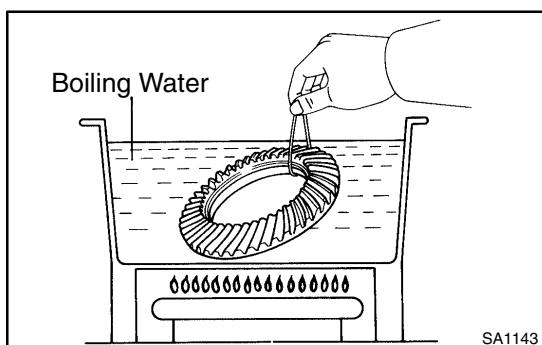
Refer to the following table to select 2 thrust washers which will ensure that the backlash is within the specification.

Thrust washer thickness

Thickness mm (in.)	Thickness mm (in.)
0.93 – 0.97 (0.0366 – 0.0382)	1.18 – 1.22 (0.0465 – 0.0480)
0.98 – 1.02 (0.0386 – 0.0402)	1.23 – 1.27 (0.0484 – 0.0500)
1.03 – 1.07 (0.0406 – 0.0421)	1.28 – 1.32 (0.0504 – 0.0520)
1.08 – 1.12 (0.0425 – 0.0441)	1.33 – 1.37 (0.0524 – 0.0539)
1.13 – 1.17 (0.0445 – 0.0461)	1.38 – 1.42 (0.0543 – 0.0559)

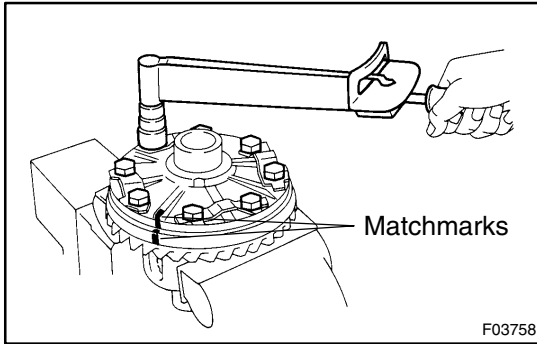


- Using a pin punch and hammer, install the straight pin through the differential case and hole of the pinion shaft.
- Using a chisel and hammer, stake the outside of the differential case pin hole.



2. INSTALL RING GEAR ON DIFFERENTIAL CASE

- Clean the contact surfaces of the differential case and ring gear.
- Heat the ring gear to approx. 100 °C (212 °F) in the boiling water.
- Carefully take the ring gear out of the boiling water.
- After the moisture on the ring gear has completely evaporated, quickly install the ring gear to the differential case.



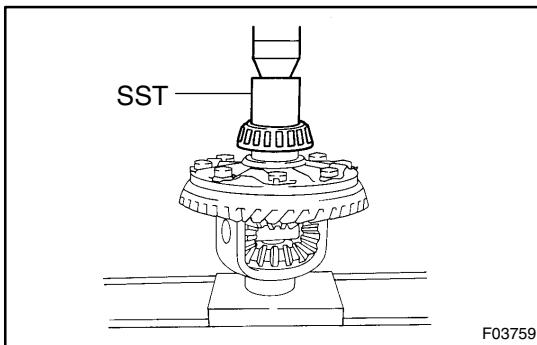
- (e) Align the matchmarks on the ring gear and differential case.
- (f) Temporarily install the 4 new lock plates and 8 bolts.
- (g) After the ring gear cools down enough, torque the 8 bolts uniformly at a time.

Torque: 97 N·m (985 kgf·cm, 71 ft·lbf)

- (h) Using a chisel and hammer, stake the 4 lock plates.

HINT:

Stake one claw so that it is flush with the flat surface of the bolt. For the claw contacting the protruding portion of the bolt, stake only the half on the tightening side.



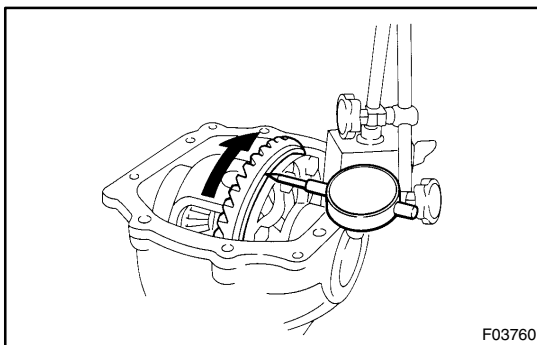
3. INSTALL SIDE BEARINGS

Using SST and a press, install the 2 side bearings into the differential case.

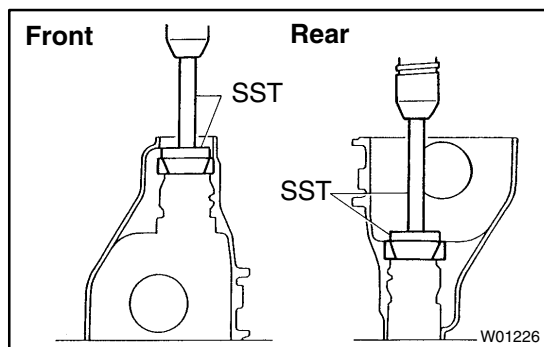
SST 09710-22021 (09710-01031)

4. INSPECT RING GEAR RUNOUT

- (a) Install the differential case on the carrier, and install the 2 plate washers so that there is no play in the bearing.
- (b) Install the bearing caps.



- (c) Using a dial indicator, measure the runout of the ring gear.
Maximum runout: 0.07 mm (0.0028 in.)
- (d) Remove the 2 bearing caps, 2 plate washers and differential carrier.

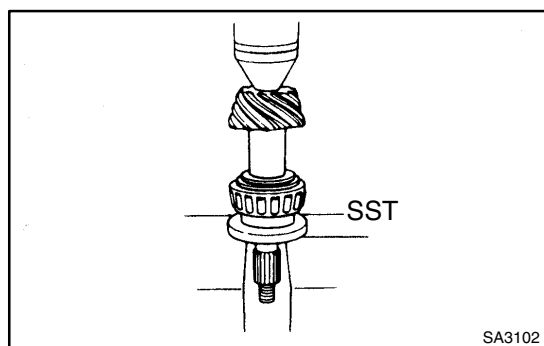


5. INSTALL FRONT AND REAR BEARING OUTER RACES

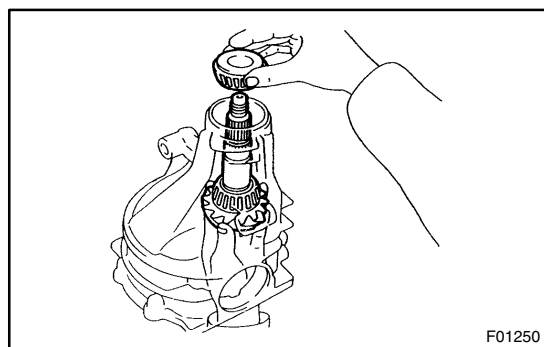
- (a) Front side:
Using SST and a press, install the outer race to the carrier.
SST 09950-60020 (09951-00790),
09950-70010 (09951-07150)
- (b) Rear side:
Using SST and a press, install the outer race to the carrier.
SST 09950-60020 (09951-00710),
09950-70010 (09951-07150)

6. INSTALL DRIVE PINION REAR BEARING

- (a) Install the removed plate washer on the drive pinion.

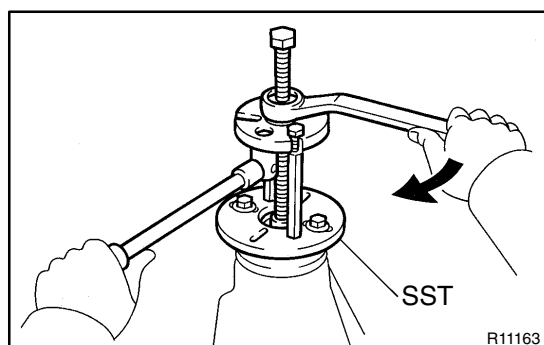


- (b) Using SST and a press, install the rear bearing onto the drive pinion.
SST 09506-30012

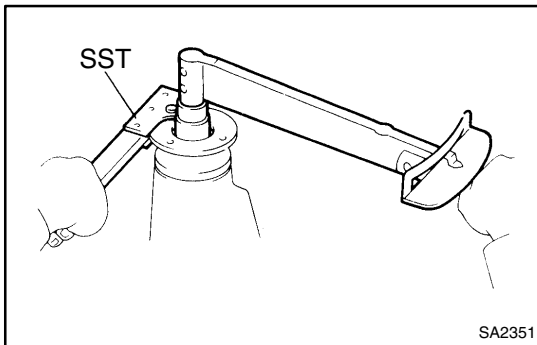


7. TEMPORARILY ADJUST DRIVE PINION PRELOAD

- (a) Install the drive pinion and front bearing.
HINT:
Assemble the spacer, oil slinger and oil seal after adjusting the gear contact pattern.



- (b) Using SST, install the companion flange.
SST 09950-30011 (09951-03010, 09953-03010,
09954-03010, 09955-03030, 09956-03020)
- (c) Coat the threads of the nut with MP grease.



- (d) Adjusting the drive pinion preload by tightening the companion flange nut.
Using SST to hold the flange, torque the nut.

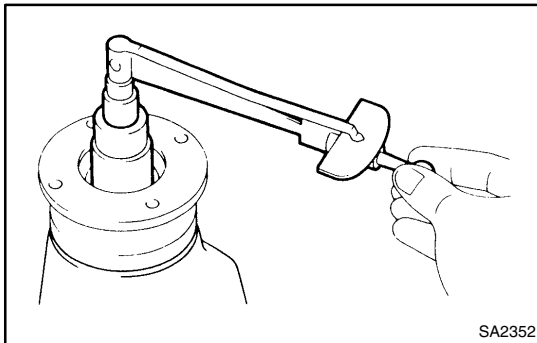
Torque:

108 – 235 N·m (1,100 – 2,400 kgf·cm, 80 – 174 ft·lbf)

SST 09330-00021

NOTICE:

As there is no spacer, torque a little at a time, being careful not to overtighten it.



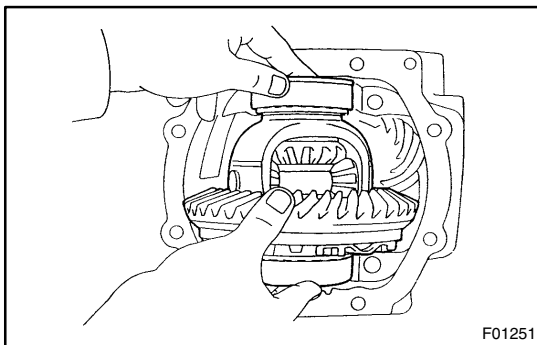
- (e) Using a torque wrench, measure the preload.

Preload (at starting):**New bearing:**

1.1 – 1.7 N·m (11 – 17 kgf·cm, 9.6 – 14.8 in.·lbf)

Reused bearing:

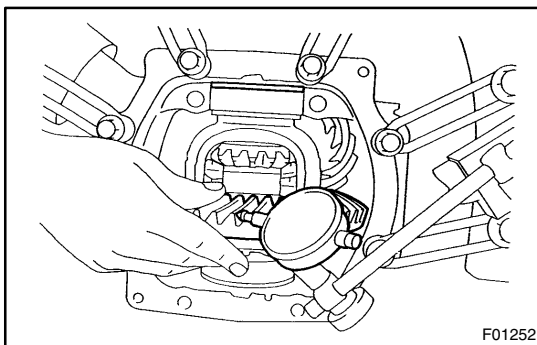
0.6 – 0.9 N·m (6 – 9 kgf·cm, 5.2 – 7.8 in.·lbf)

**8. INSTALL DIFFERENTIAL CASE IN CARRIER**

- (a) Place the 2 bearing outer races on their respective bearings. Make sure the left and right races are not interchanged.
(b) Install the differential case in the carrier.

9. ADJUST RING GEAR BACKLASH

- (a) Install only the plate washer on the ring gear back side.
(b) Snug down the washer and bearing by tapping on the ring gear with a plastic hammer.

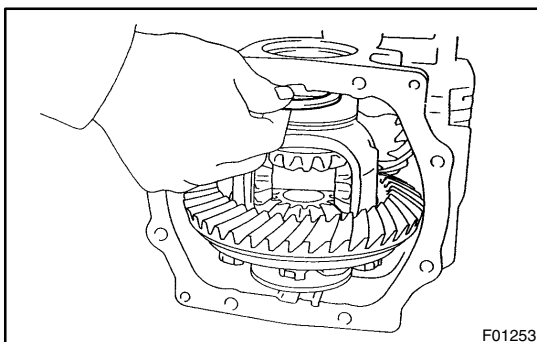


- (c) Using a dial indicator, hold the companion flange and measure the ring gear backlash.

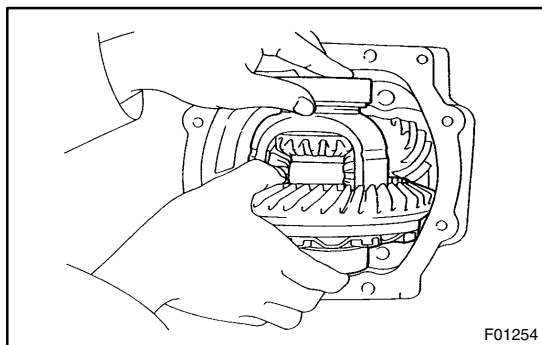
Backlash (reference):

0.13 – 0.18 mm (0.0051 – 0.0071 in.)

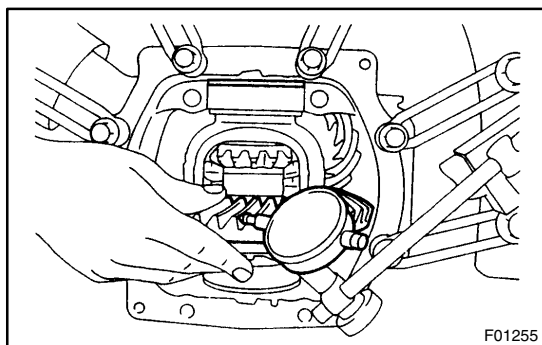
- (d) Select a ring gear back side plate washer so that the backlash is 0.13 – 0.18 mm (0.0051 – 0.0071 in.).



- (e) Select a ring gear teeth side washer so that there is no clearance between the outer race and case.
(f) Remove the plate washer and differential case.
(g) Install the plate washer to the ring gear back side.



- (h) Place the outer plate washer onto the differential case together with the outer race, and install the differential case with the outer race into the carrier.
- (i) Using a plastic hammer, snug down the washer and bearing by tapping the ring gear.



- (j) Using a dial indicator, hold the companion flange and measure the ring gear backlash.

Backlash: 0.13 – 0.18 mm (0.0051 – 0.0071 in.)

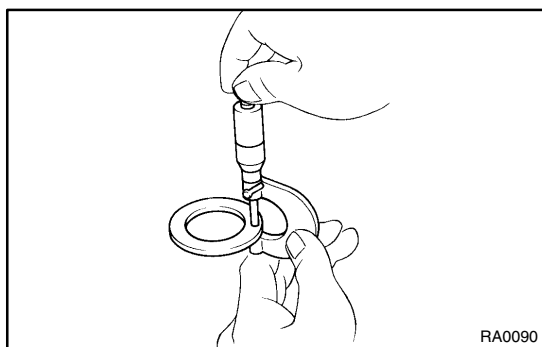
If it is not within the specification, adjust it by either increasing or decreasing the thickness of washers on both sides by an equal amount.

HINT:

There should be clearance between the plate washer and case. Ensure that there is ring gear backlash.

10. ADJUST SIDE BEARING PRELOAD

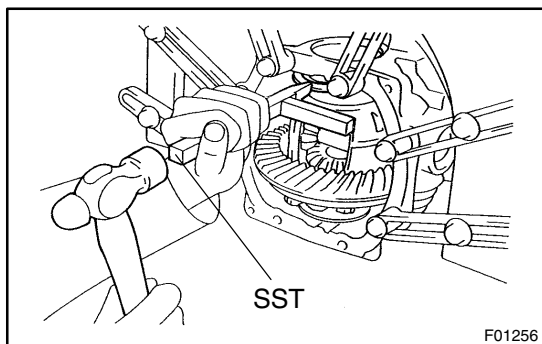
- (a) After adjusting the ring gear backlash as reference, remove the teeth side plate washer.



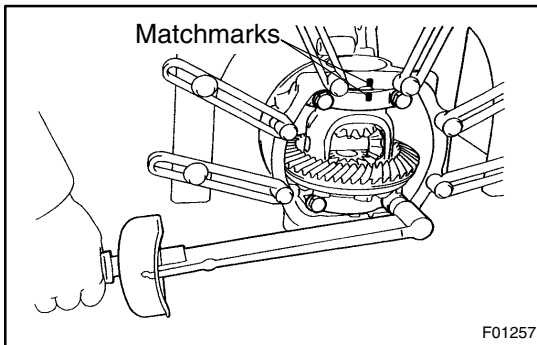
- (b) Using a micrometer, measure the thickness of the removed plate washer.
- (c) Install a new washer 0.06 – 0.09 mm (0.0024 – 0.0035 in.) thicker than the removed washer.

HINT:

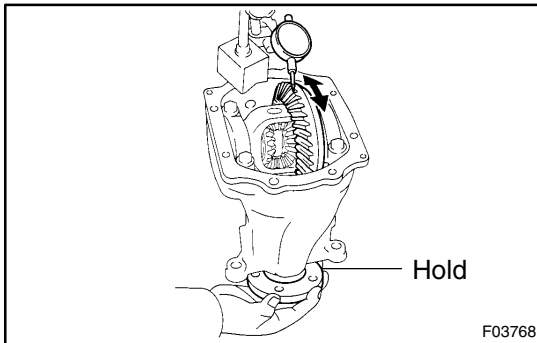
Select a washer which can be pressed in 2/3 of the way by finger.



- (d) Using SST and a hammer, tap in the plate washer.
SST 09504-22011



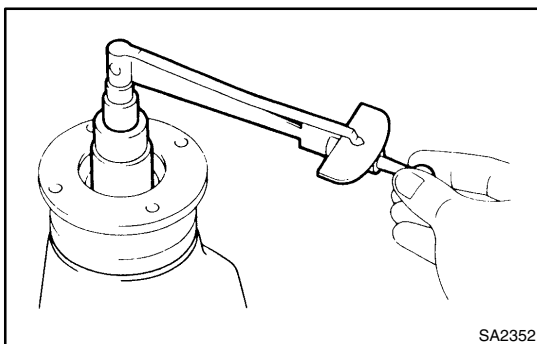
- (e) Align the matchmarks on the bearing cap and differential carrier, and install the 2 bearing caps and 4 bolts.
Torque: 79 N·m (800 kgf·cm, 58 ft·lbf)



- (f) Recheck the ring gear backlash.
Backlash: 0.13 – 0.18 mm (0.0051 – 0.0071 in.)
 If it is not within the specification, adjust it by either increasing or decreasing the washers thickness on both sides by equal amount.
HINT:
 The backlash will change by about 0.02 mm (0.0008 in.) corresponding to 0.03 mm (0.0012 in.) change in the plate washer thickness.

Washer thickness

Thickness mm (in.)	Thickness mm (in.)	Thickness mm (in.)
2.21 – 2.23 (0.0870 – 0.0878)	2.57 – 2.59 (0.1012 – 0.1020)	2.93 – 2.95 (0.1154 – 0.1161)
2.24 – 2.26 (0.0882 – 0.0890)	2.60 – 2.62 (0.1024 – 0.1031)	2.96 – 2.98 (0.1165 – 0.1173)
2.27 – 2.29 (0.0894 – 0.0902)	2.63 – 2.65 (0.1035 – 0.1043)	2.99 – 3.01 (0.1177 – 0.1185)
2.30 – 2.32 (0.0906 – 0.0913)	2.66 – 2.68 (0.1047 – 0.1055)	3.02 – 3.04 (0.1189 – 0.1197)
2.33 – 2.35 (0.0917 – 0.0925)	2.69 – 2.71 (0.1059 – 0.1067)	3.05 – 3.07 (0.1201 – 0.1209)
2.36 – 2.38 (0.0929 – 0.0937)	2.72 – 2.74 (0.1071 – 0.1079)	3.08 – 3.10 (0.1213 – 0.1220)
2.39 – 2.41 (0.0941 – 0.0949)	2.75 – 2.77 (0.1083 – 0.1091)	3.11 – 3.13 (0.1224 – 0.1232)
2.42 – 2.44 (0.0953 – 0.0961)	2.78 – 2.80 (0.1094 – 0.1102)	3.14 – 3.16 (0.1236 – 0.1244)
2.45 – 2.47 (0.0965 – 0.0972)	2.81 – 2.83 (0.1106 – 0.1114)	3.17 – 3.19 (0.1248 – 0.1256)
2.48 – 2.50 (0.0976 – 0.0984)	2.84 – 2.86 (0.1118 – 0.1126)	3.20 – 3.22 (0.1260 – 0.1268)
2.51 – 2.53 (0.0988 – 0.0996)	2.87 – 2.89 (0.1130 – 0.1138)	–
2.54 – 2.56 (0.1000 – 0.1008)	2.90 – 2.92 (0.1142 – 0.1150)	–



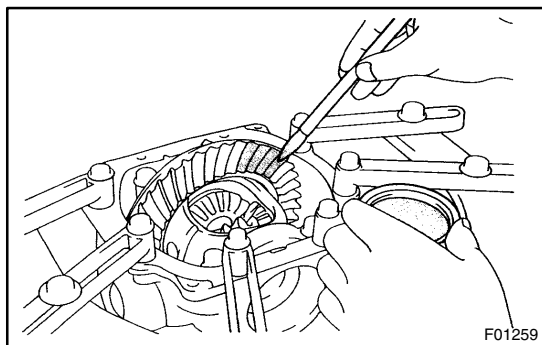
11. MEASURE TOTAL PRELOAD

Using a torque wrench, measure the preload.

Total preload (at starting):

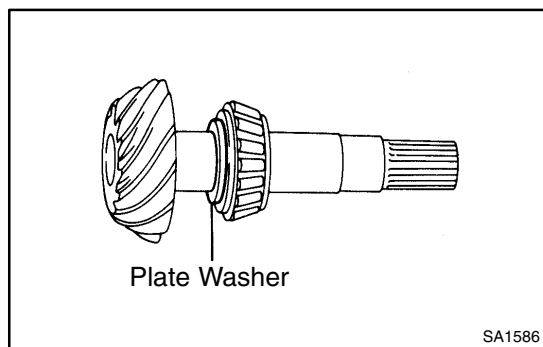
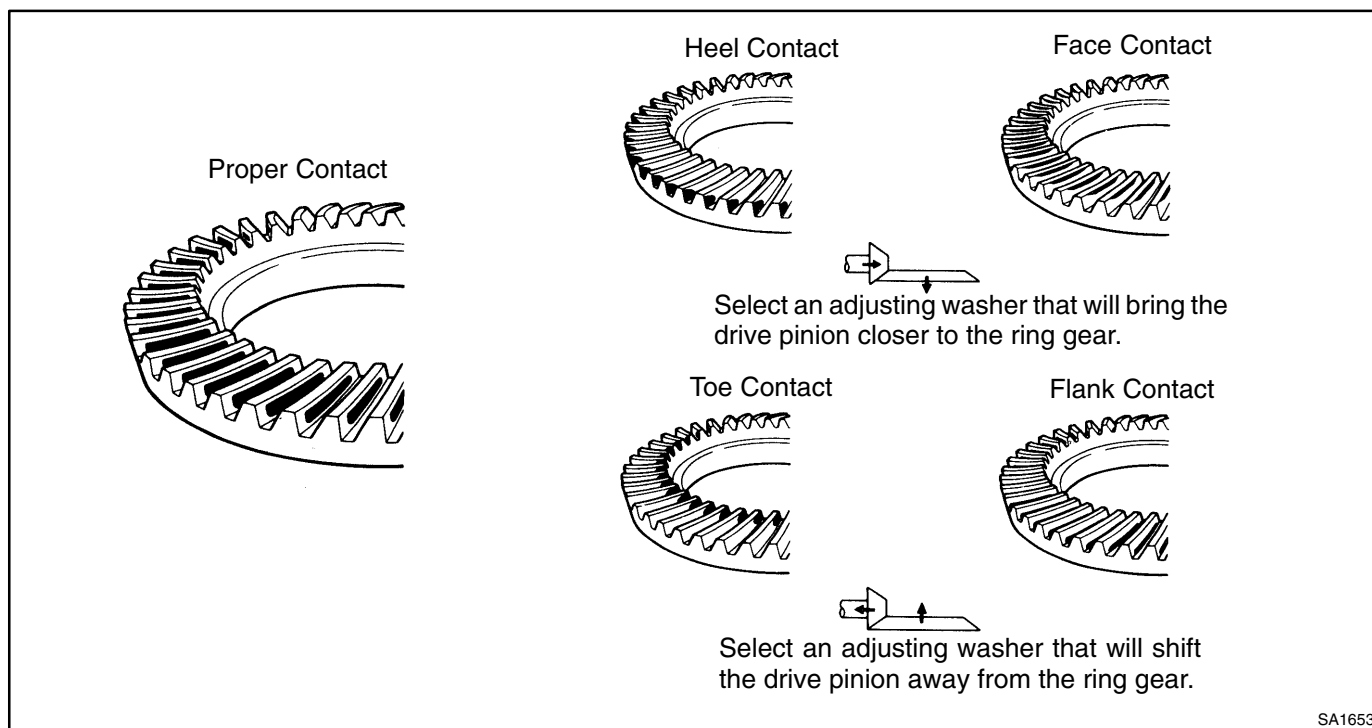
Drive pinion preload plus

0.3 – 0.5 N·m (3 – 5 kgf·cm, 2.6 – 4.3 in·lbf)



12. INSPECT TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION

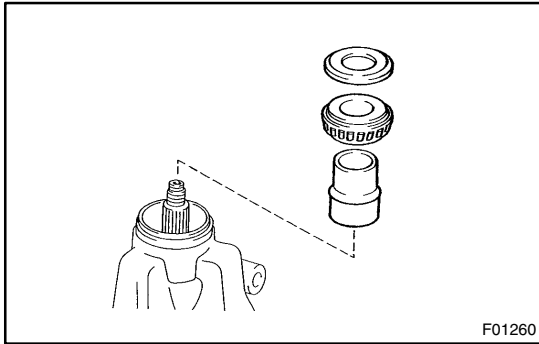
- Coat 3 or 4 teeth at 3 different positions on the ring gear with red lead primer.
- Hold the companion flange firmly and rotate the ring gear in both directions.
- Inspect the tooth contact pattern.



If the teeth are not contacting properly, use the following table to select a proper washer for correction.

Washer thickness

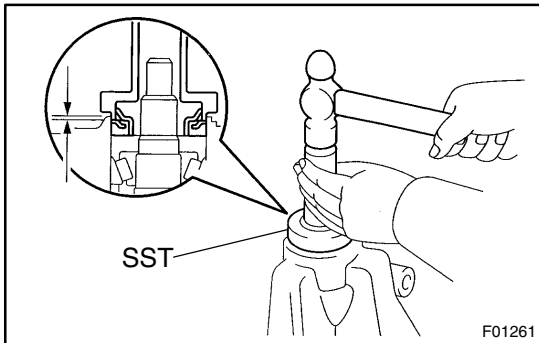
Thickness mm (in.)	Thickness mm (in.)	Thickness mm (in.)
2.26 – 2.28 (0.0890 – 0.0898)	2.41 – 2.43 (0.0949 – 0.0957)	2.56 – 2.58 (0.1008 – 0.1016)
2.29 – 2.31 (0.0902 – 0.0909)	2.44 – 2.46 (0.0961 – 0.0969)	2.59 – 2.61 (0.1020 – 0.1028)
2.32 – 2.34 (0.0913 – 0.0921)	2.47 – 2.49 (0.0972 – 0.0980)	2.62 – 2.64 (0.1031 – 0.1039)
2.35 – 2.37 (0.0925 – 0.0933)	2.50 – 2.52 (0.0984 – 0.0992)	2.65 – 2.67 (0.1043 – 0.1051)
2.38 – 2.40 (0.0937 – 0.0945)	2.53 – 2.55 (0.0996 – 0.1004)	2.68 – 2.70 (0.1055 – 0.1063)



13. **REMOVE COMPANION FLANGE** (See page SA-63)
14. **REMOVE FRONT BEARING** (See page SA-63)
15. **INSTALL NEW BEARING SPACER AND FRONT BEARING**

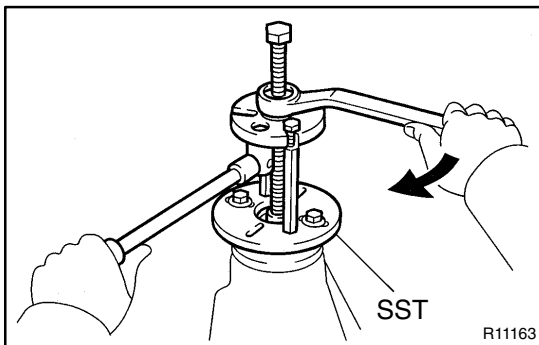
Install a new bearing spacer and front bearing on the drive pinion.

16. **INSTALL OIL SLINGER**



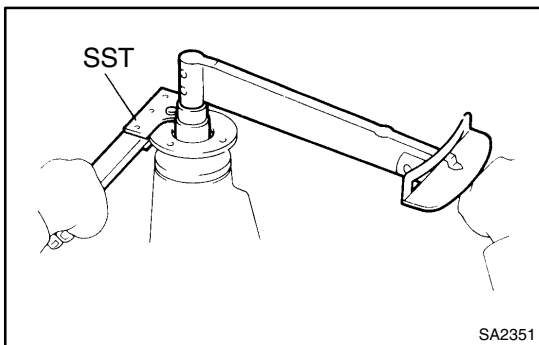
17. **INSTALL NEW FRONT OIL SEAL**

- (a) Using SST and hammer, install a new oil seal.
SST 09554-22010
Oil seal drive in depth: 2.0 mm (0.079 in.)
- (b) Coat MP grease to the oil seal lip.

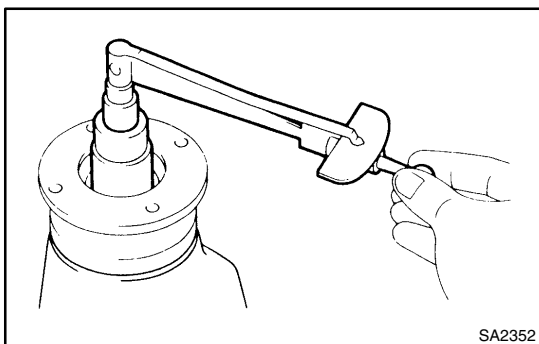


18. **INSTALL COMPANION FLANGE**

- (a) Using SST, install the companion flange on the drive pinion.
SST 09950-30011 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03020)
- (b) Coat the threads of a new nut with hypoid gear oil.



- (c) Using SST to hold the flange, torque the nut.
SST 09330-00021
Torque: 108 N·m (1,100 kgf·cm, 80 ft·lbf)



19. **CHECK DRIVE PINION PRELOAD**

Using a torque wrench, measure the preload of the backlash between the drive pinion and ring gear.

Preload (at starting):

New bearing:

1.1 – 1.7 N·m (11 – 17 kgf·cm, 9.6 – 14.8 in·lbf)

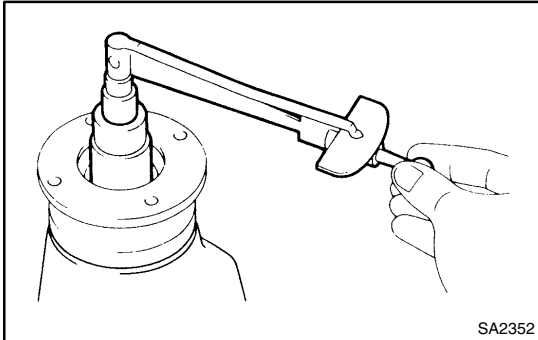
Reused bearing:

0.6 – 0.9 N·m (6 – 9 kgf·cm, 5.2 – 7.8 in·lbf)

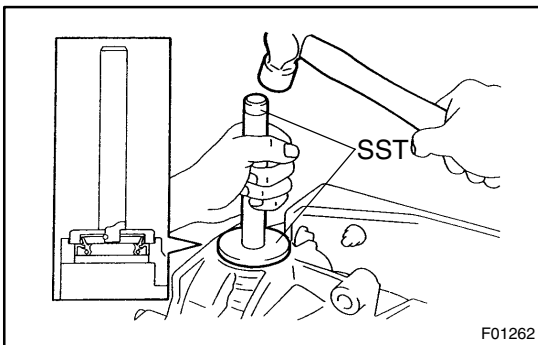
- If the preload is greater than the specification, replace the bearing spacer.
- If the preload is less than the specification, retorque the nut with 13 N·m (130 kgf·cm, 9 ft·lbf) of torque at a time until the specified preload is reached.

Torque: 235 N·m (2,400 kgf·cm, 174 ft·lbf) or less

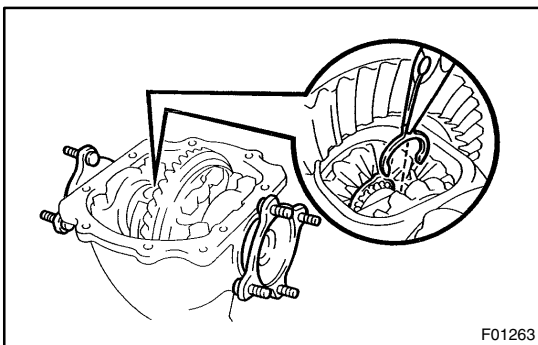
- If the maximum torque is exceeded while retightening the nut, replace the bearing spacer and repeat the preload adjusting procedure. Do not loosen the pinion nut to reduce the preload.



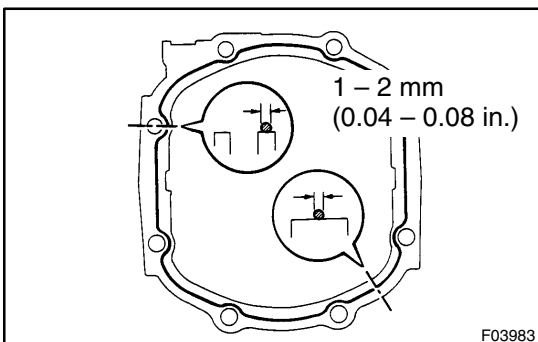
20. **RECHECK TOTAL PRELOAD (See step 11)**
21. **RECHECK RING GEAR BACKLASH (See step 9)**
22. **RECHECK TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION (See step 12)**
23. **CHECK COMPANION FLANGE RUNOUT (See page SA-63)**
24. **STAKE DRIVE PINION NUT**

**25. INSTALL SIDE GEAR SHAFT OIL SEALS**

- (a) Using SST and a hammer, install 2 new oil seals until they are flush with the carrier end surface.
SST 09550-00032, 09950-70010 (09951-07150)
- (b) Coat MP grease to the oil seal lip.

**26. INSTALL SIDE GEAR SHAFTS**

- (a) Install the 2 side gear shafts to the differential case.
- (b) Using needle nose pliers, install 2 new snap rings to the 2 side gear shafts.

**27. INSTALL DIFFERENTIAL CARRIER COVER**

- (a) Install the oil deflector and bolt to the carrier cover.
Torque: 7.4 N·m (75 kgf·cm, 65 ft·lbf)
- (b) Install the breather plug to the carrier cover.
Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)
- (c) Clean contacting surfaces of any residual FIPG material using gasoline or alcohol.
- (d) Apply FIPG to the carrier.

FIPG:**Part No.08826-00090, THREE BOND 1281 or equivalent****HINT:**

Install the carrier cover within 3 minutes after applying FIPG.

- (e) Install the carrier cover with the 8 bolts.

Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)

INSTALLATION

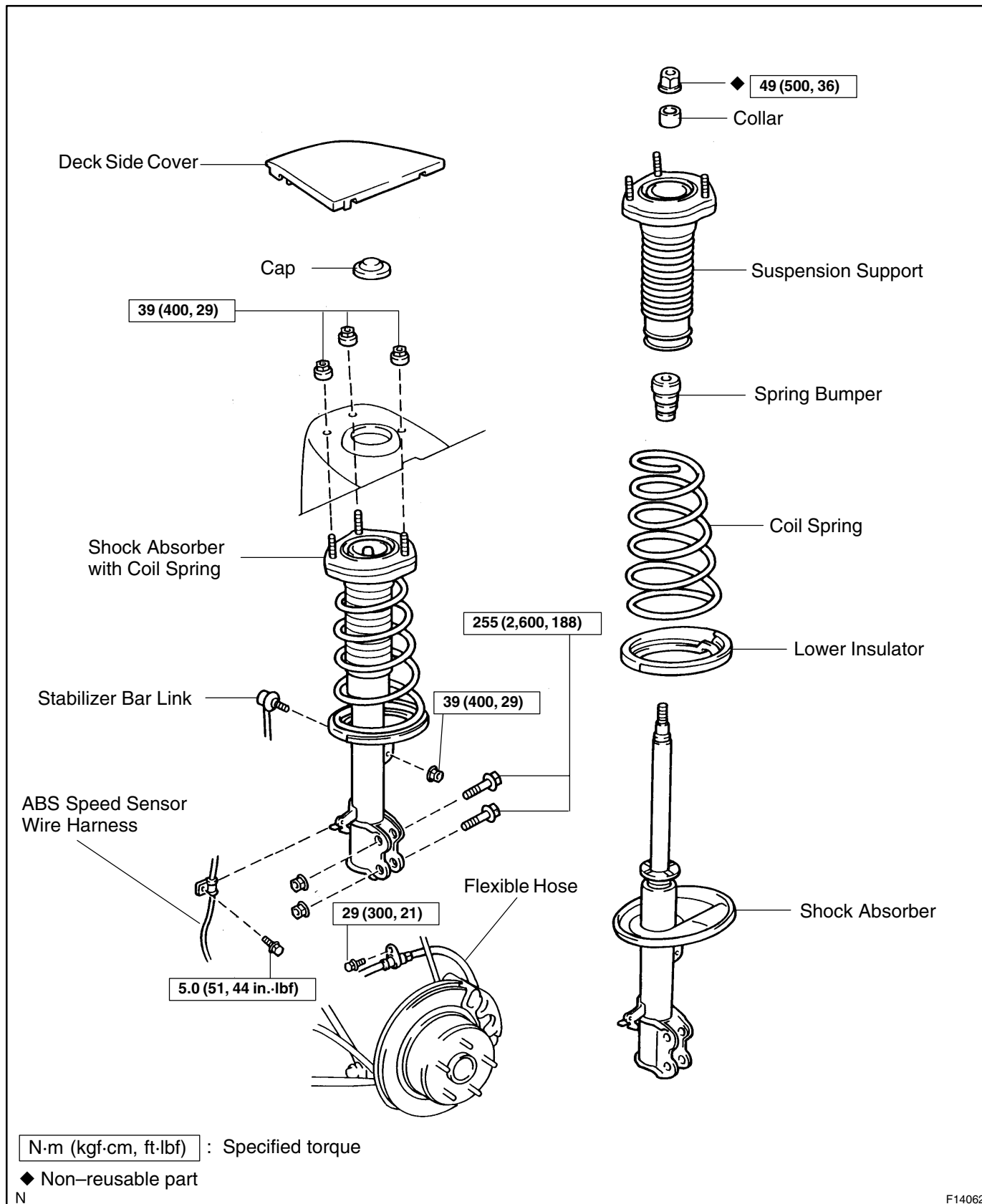
Installation is in the reverse order of removal (See page SA-62).

HINT:

After installation, fill differential with the hypoid gear oil (See page SA-58)

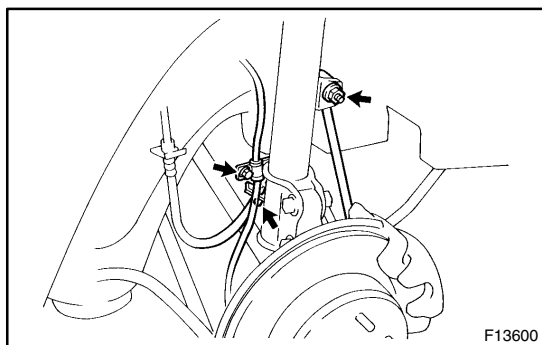
REAR SHOCK ABSORBER COMPONENTS

SA03V-04



REMOVAL

1. **REMOVE DECK SIDE COVER**
2. **REMOVE REAR WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



3. **DISCONNECT ABS SPEED SENSOR WIRE HARNESS CLAMP**

Remove the bolt and ABS speed sensor wire harness clamp from shock absorber.

Torque: 5.0 N·m (51 kgf·cm, 44 in·lbf)

4. **REMOVE FLEXIBLE HOSE FROM SHOCK ABSORBER**

Remove the bolt, and disconnect the flexible hose from the shock absorber bracket.

Torque: 29 N·m (300 kgf·cm, 21 ft·lbf)

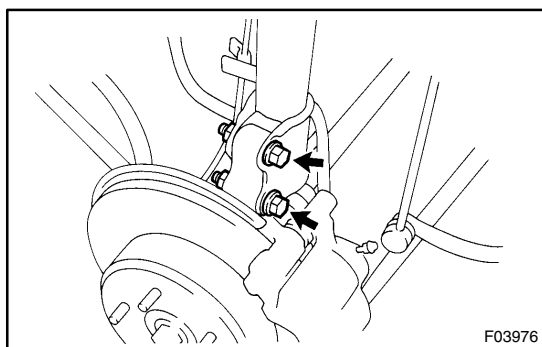
5. **DISCONNECT STABILIZER BAR LINK FROM SHOCK ABSORBER**

Remove the nut and disconnect the stabilizer bar link from the shock absorber.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

HINT:

If the ball joint turns together with the nut, use a 5 mm hexagon wrench to hold the stud.



6. **REMOVE SHOCK ABSORBER WITH COIL SPRING**

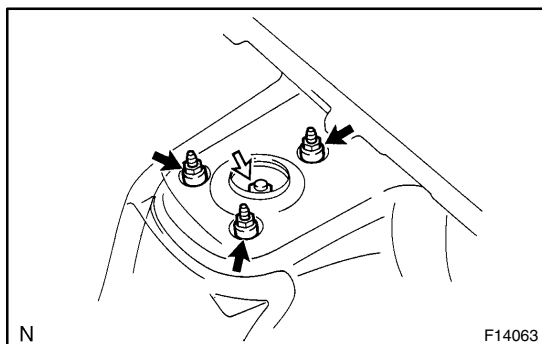
- (a) Loosen the 2 bolts on the lower side of the shock absorber.

HINT:

Do not remove the 2 bolts.

Torque: 255 N·m (2,600 kgf·cm, 188 ft·lbf)

- (b) Support the rear axle carrier with a jack.
- (c) Remove the cap from the suspension support.



- (d) Loosen the suspension support center nut.

NOTICE:

Do not remove the nut.

HINT:

If not disassembling the rear shock absorber, it is not necessary to loosen the nut.

Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

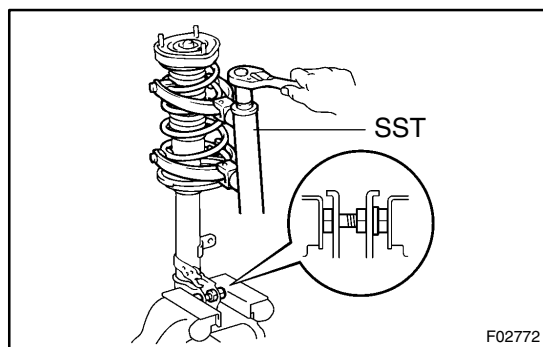
- (e) Remove the 3 nuts of the suspension support.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

- (f) Lower the rear axle carrier and remove the 2 nuts and bolts on the lower side of the shock absorber.

HINT:

At the time of installation, coat the nut's threads with engine oil.

- (g) Remove the shock absorber with the coil spring.



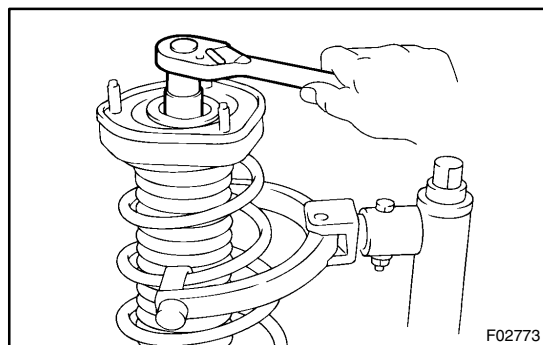
DISASSEMBLY

REMOVE COIL SPRING

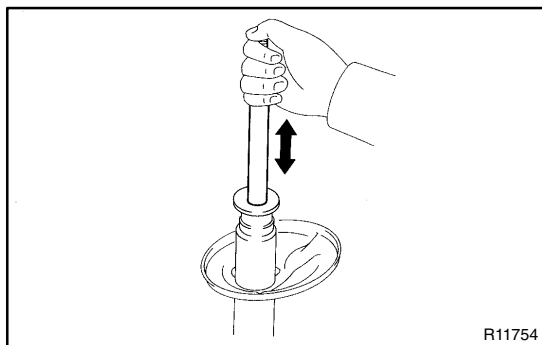
- (a) Install 2 nuts and a bolt to the bracket at the lower part of the shock absorber, and secure it in a vise.
- (b) Using SST, compress the coil spring.
SST 09727-30021

NOTICE:

Do not use an impact wrench. It will damage the SST.



- (c) Remove the nut, collar and suspension support.
- (d) Remove the coil spring, spring bumper and lower insulator.



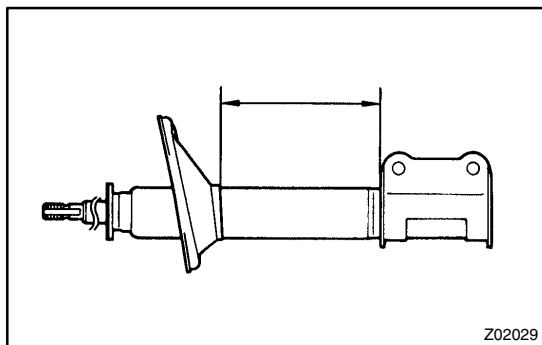
INSPECTION

INSPECT SHOCK ABSORBER

Compress and extend the shock absorber rod, and check that there is no abnormal resistance or unusual operation sound. If there is any abnormality, replace the shock absorber with a new one.

NOTICE:

When disposing of the shock absorber, see DISPOSAL on page SA-85.



DISPOSAL

1. **FULLY EXTEND SHOCK ABSORBER ROD**
2. **DRILL HOLE TO DISCHARGE GAS FROM CYLINDER**

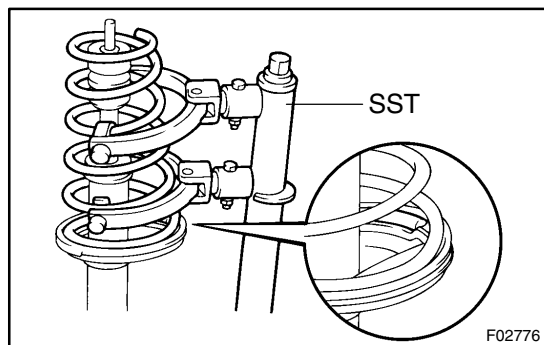
Using a drill, make a hole in the cylinder, as shown in the illustration to discharge the gas inside.

CAUTION:

The discharging gas is harmless, but be careful of chips which may fly up when drilling.

REASSEMBLY

1. INSTALL LOWER INSULATOR
2. INSTALL SPRING BUMPER TO PISTON ROD



3. INSTALL COIL SPRING

- (a) Using SST, compress the coil spring.
SST 09727-30021

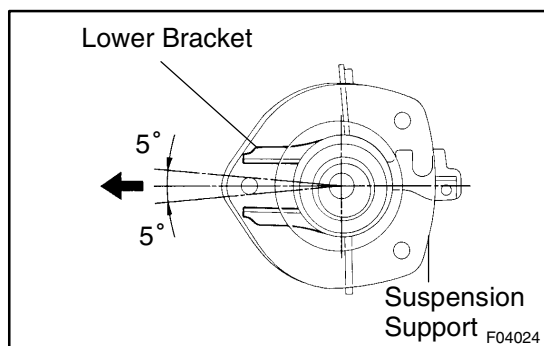
NOTICE:

Do not use an impact wrench. It will damage the SST.

- (b) Install the coil spring to the shock absorber.

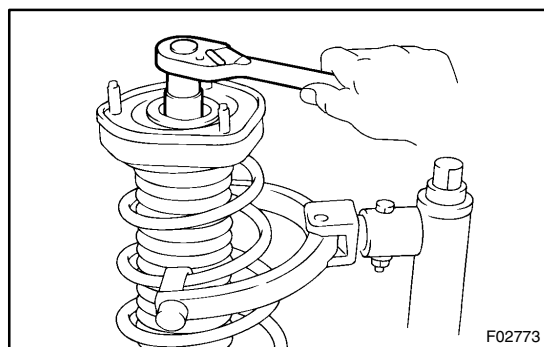
HINT:

Fit the lower end of the coil spring into the gap of the lower seat.



4. INSTALL SUSPENSION SUPPORT

- (a) Align the suspension support with the shock absorber lower bracket, as shown in the illustration.



- (b) Install the collar to the piston rod.
- (c) Temporarily install a new nut.
- (d) Remove the SST.
SST 09727-30021

HINT:

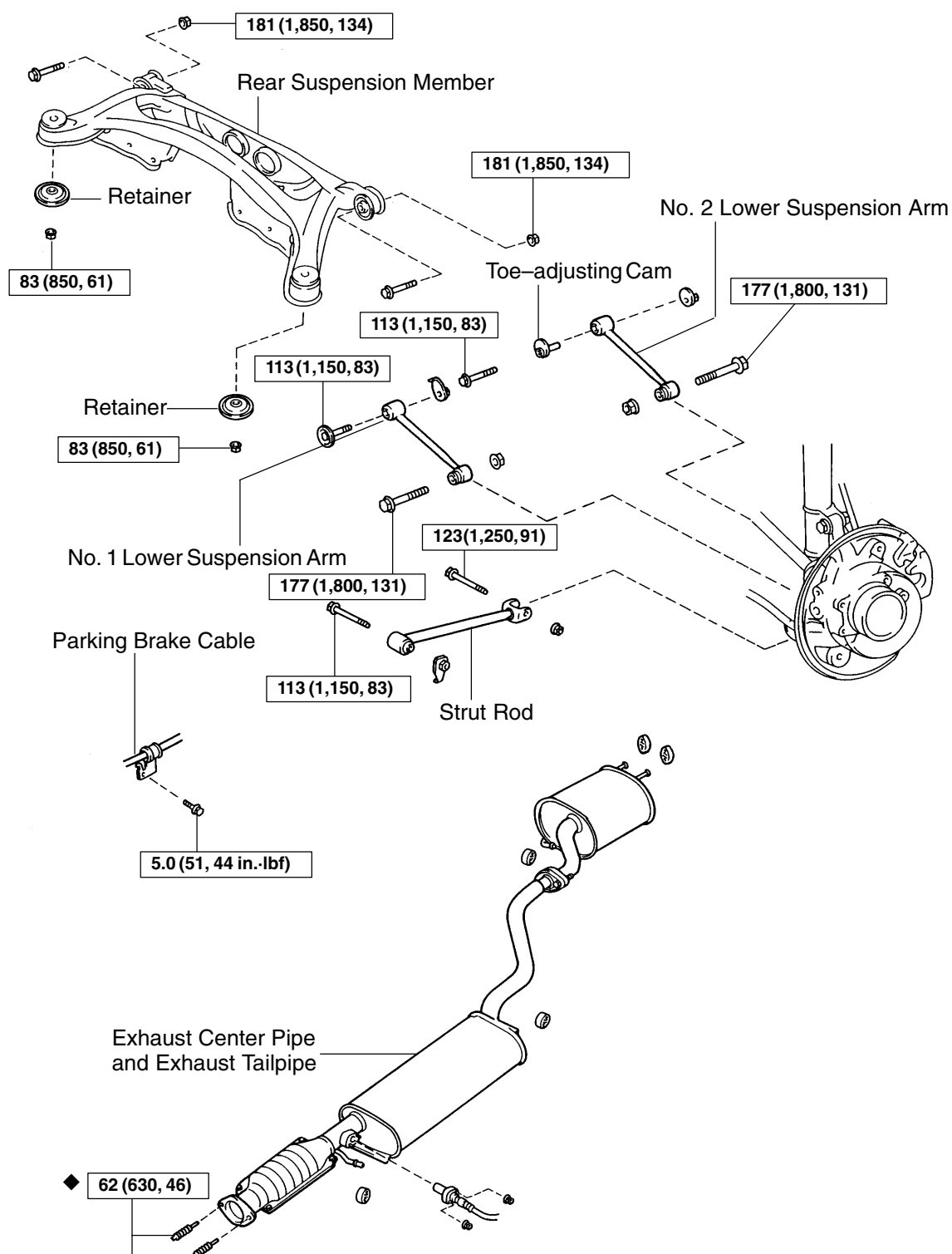
After removing SST, recheck the direction of the suspension support.

INSTALLATION

Installation is in the reverse order of removal (See page SA-81).

REAR LOWER SUSPENSION ARM AND STRUT ROD COMPONENTS

SA042-04



N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

N

F12953

REMOVAL

1. REMOVE REAR WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

2. REMOVE EXHAUST CENTER PIPE AND EXHAUST TAILPIPE

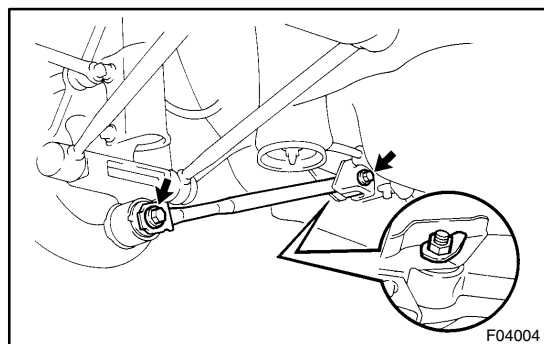
Remove the 2 bolts, exhaust center pipe and exhaust tailpipe.

Torque: 62 N·m (630 kgf·cm, 46 ft·lbf)

3. DISCONNECT PARKING BRAKE CABLE BRACKET

Remove the bolt and disconnect the parking brake bracket from the body.

Torque: 5.0 N·m (51 kgf·cm, 44 in·lbf)



4. REMOVE STRUT ROD

Remove the 2 bolts, nuts and strut rod.

Torque:

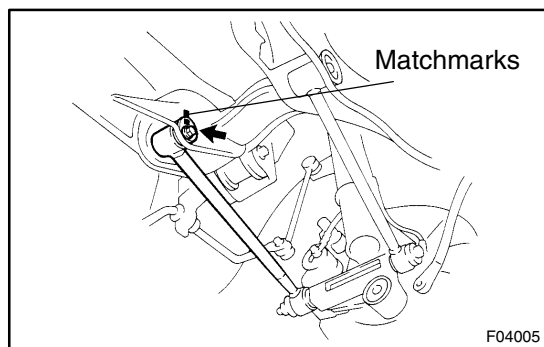
Body side: 113 N·m (1,150 kgf·cm, 83 ft·lbf)

Carrier side: 123 N·m (1,250 kgf·cm, 91 ft·lbf)

HINT:

At the time of installation, after stabilizing the suspension, torque the bolt.

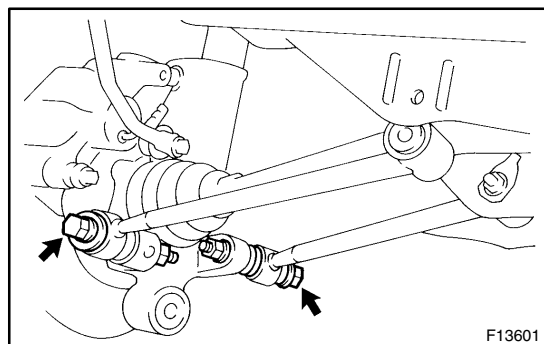
5. REMOVE NO. 2 LOWER SUSPENSION ARM



(a) Place matchmarks on the toe-adjusting cam and suspension member.

(b) Remove the bolt, nut and toe-adjusting cam and disconnect the No. 2 lower suspension arm from the rear suspension member.

Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)



(c) Remove the bolt, nut and No. 2 lower suspension arm.

Torque: 177 N·m (1,800 kgf·cm, 131 ft·lbf)

HINT:

At the time of installation, after stabilizing the suspension, torque the bolt.

6. REMOVE NO. 1 LOWER SUSPENSION ARM

(a) Remove the bolt and nut, and disconnect the No. 1 lower suspension arm from the rear axle carrier.

Torque: 177 N·m (1,800 kgf·cm, 131 ft·lbf)

HINT:

At the time of installation, after stabilizing the suspension, torque the bolt.

- (b) Loosen the No. 1 lower suspension arm rear suspension member side set bolt.

Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)

HINT:

- Do not remove the bolt.
- At the time of installation, after stabilizing the suspension, torque the bolt.

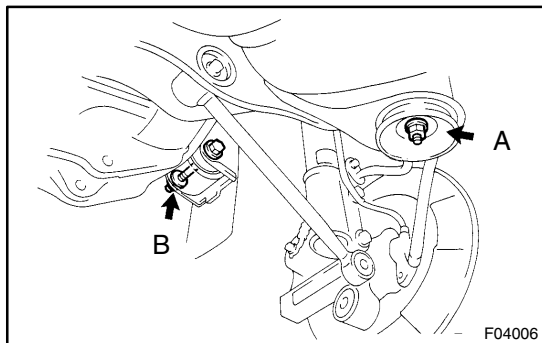
- (c) Support the rear suspension member with a jack.
(d) Remove the 4 nuts, 2 bolts and 2 retainers from the rear suspension member.

Torque:

A: 83 N·m (850 kgf·cm, 61 ft·lbf)

B: 181 N·m (1,850 kgf·cm, 134 ft·lbf)

- (e) Lower the jack, remove the bolt, nut and No. 1 lower suspension arm.



INSTALLATION

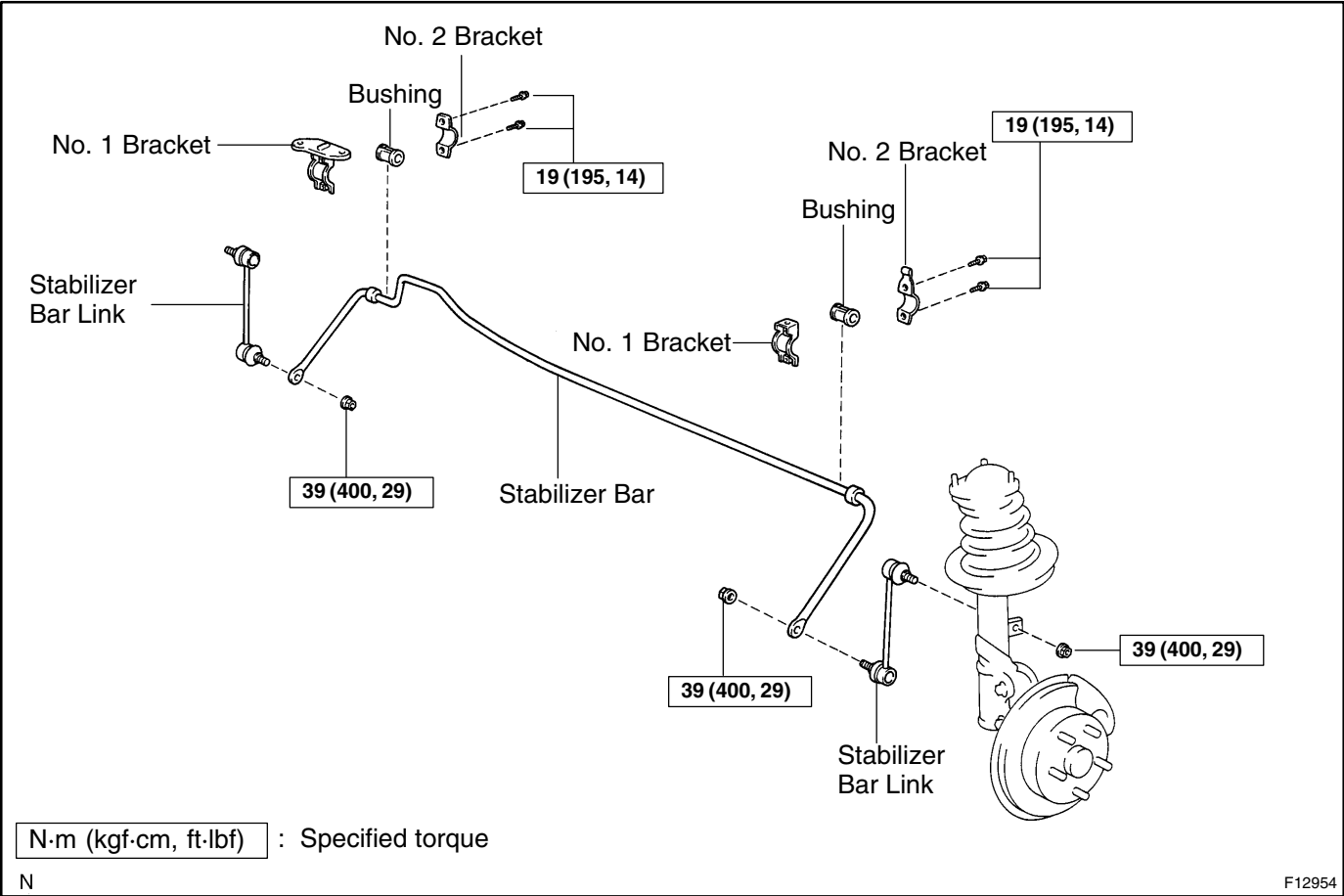
Installation is in the reverse order of removal (See page SA-89).

HINT:

After installation, check the rear wheel alignment (See page SA-8).

REAR STABILIZER BAR COMPONENTS

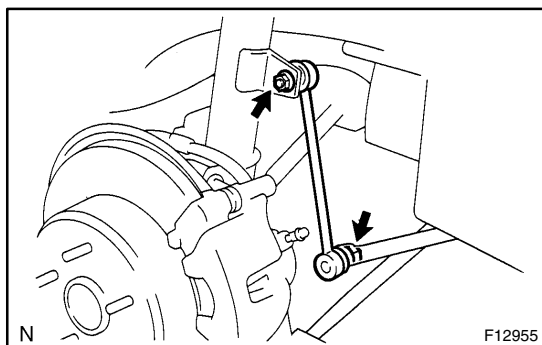
SA04A-04



REMOVAL

1. REMOVE REAR WHEELS

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



2. REMOVE LEFT AND RIGHT STABILIZER BAR LINKS

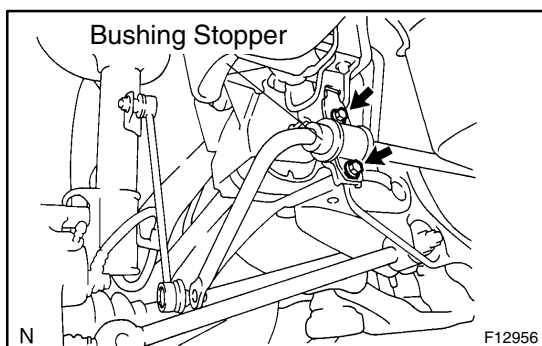
(a) Remove the 2 nuts and stabilizer bar link.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

HINT:

If the ball joint turns together with the nut, use a 5 mm hexagon wrench to hold the stud.

(b) Employ the same manner described above to the other side.



3. REMOVE LEFT AND RIGHT STABILIZER BAR NO. 2 BRACKETS AND BUSHINGS

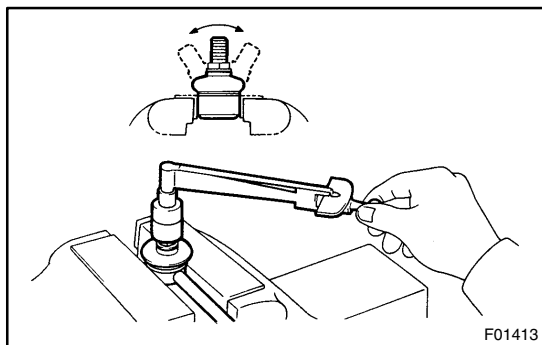
Remove the 2 bolts, No. 2 bracket and bushing.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

HINT:

At the time of installation, install the bushing to the inside of the bushing stopper on the stabilizer bar.

4. REMOVE STABILIZER BAR



INSPECTION

INSPECT STABILIZER BAR LINK BALL JOINT FOR ROTATION CONDITION

- (a) As shown in the illustration, flip the ball joint stud back and forth 5 times, before installing the nut.
- (b) Using a torque wrench, turn the nut continuously 1 turn per 2 – 4 seconds and take the torque reading on the 5th turn.

Turning torque:

0.05 – 1.0 N·m (0.5 – 10 kgf·cm, 0.4 – 8.7 in.·lbf)

INSTALLATION

Installation is in the reverse order of removal (See page SA-93).